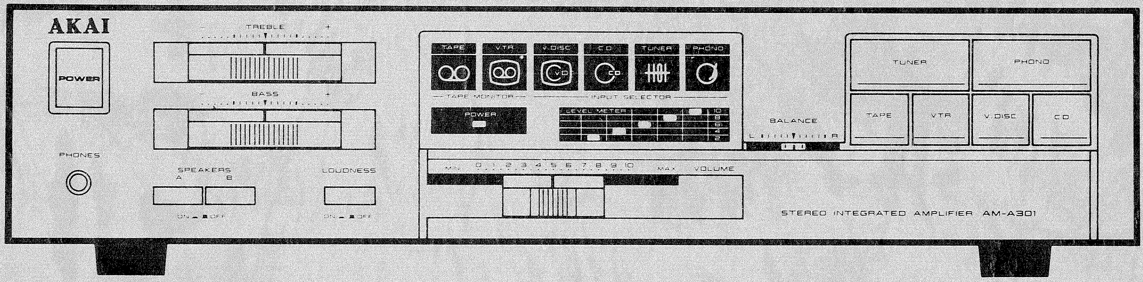
AKAI SERVICE MANUAL


AKAI
POWER
TREBLE
BASS
PHONES
SPEAKERS
A
B
ON OFF
LOUDNESS
ON OFF
TAPE
V.T.R
V.DISC
C.D
TUNER
PHONO
TAPE MONITOR
INPUT SELECTOR
POWER
LEVEL METER
BALANCE
L
R
TUNER
PHONO
TAPE
VTR
V.DISC
CD
MIN
0 1 2 3 4 5 6 7 8 9 10
MAX
VOLUME
STEREO INTEGRATED AMPLIFIER AM-A301

STEREO INTEGRATED AMPLIFIER

MODEL AM-A301

AKAI

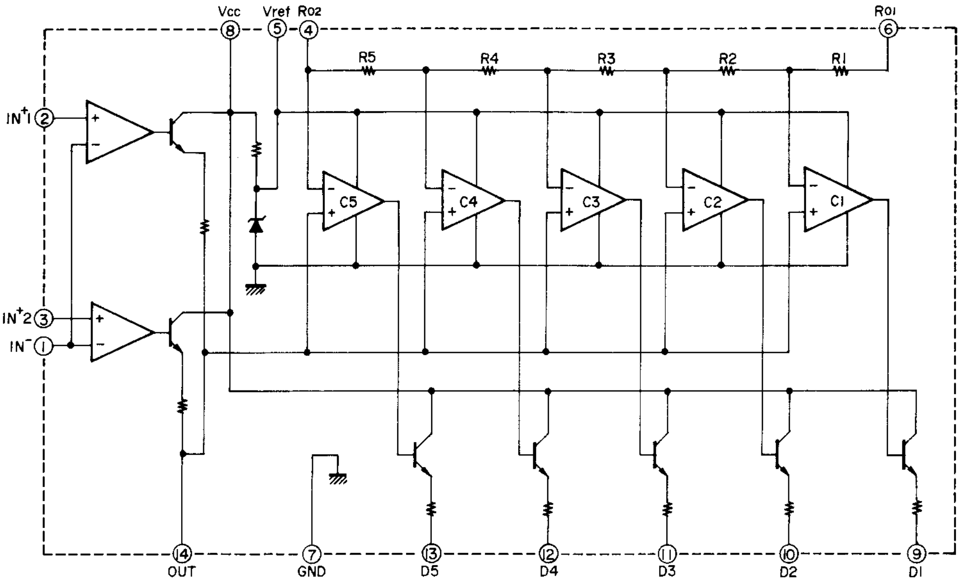
MODEL AM-A301

SCHEMATIC DIAGRAM AND PC BOARDS

TABLE OF CONTENTS

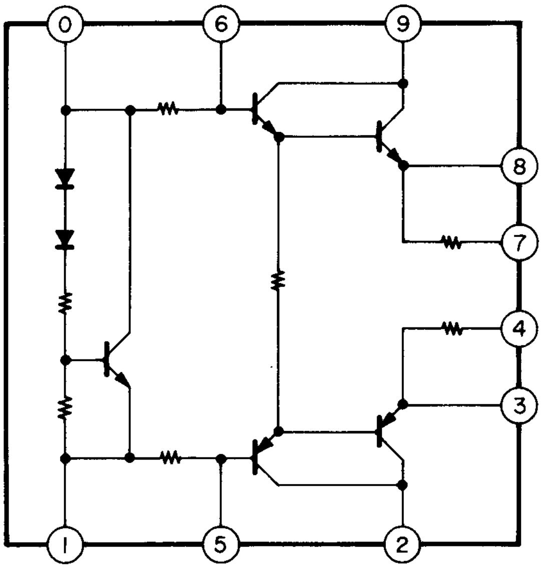
1. IC'S LB1416, STK1050, STK3042 2
2. AM–A301 BLOCK DIAGRAM 3
3. AM–A301 SCHEMATIC DIAGRAM 4
4. CONTROL PCB, HEADPHONE PCB, MAIN AMP PCB,
   SPEAKER TERMINAL PCB 5
5. EQUALIZER PCB, FILTER PCB, FUNCTION PCB,
   PIN JACK PCB, POWER SUPPLY PCB, VIDEO PCB 6

LB-1416



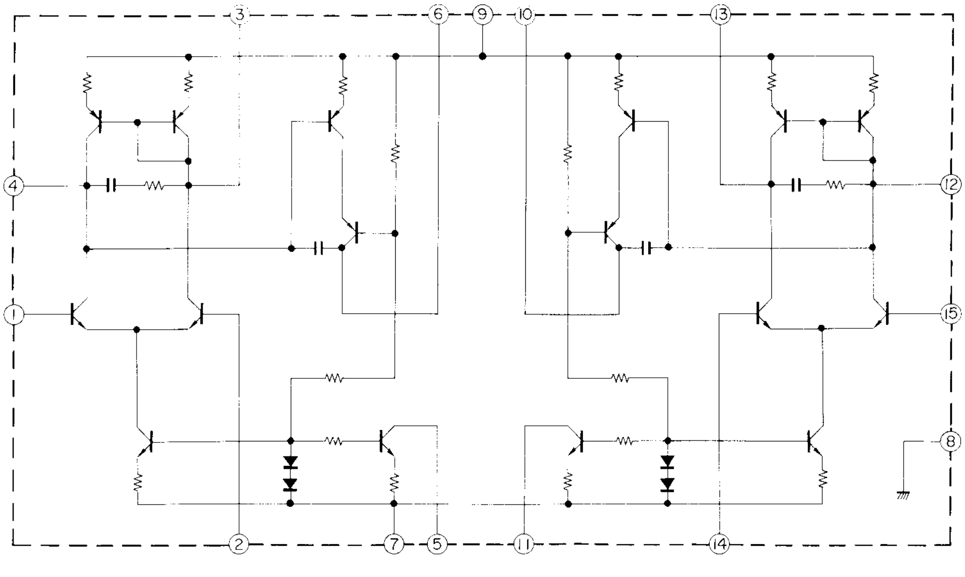
Vcc
Vref
Ro2
Ro1
⑧
⑤
④
⑥
R5
R4
R3
R2
R1
IN+1 ②
IN+2 ③
IN− ①
C5
C4
C3
C2
C1
⑭ OUT
⑦ GND
⑬ D5
⑫ D4
⑪ D3
⑩ D2
⑨ D1

STK 1050

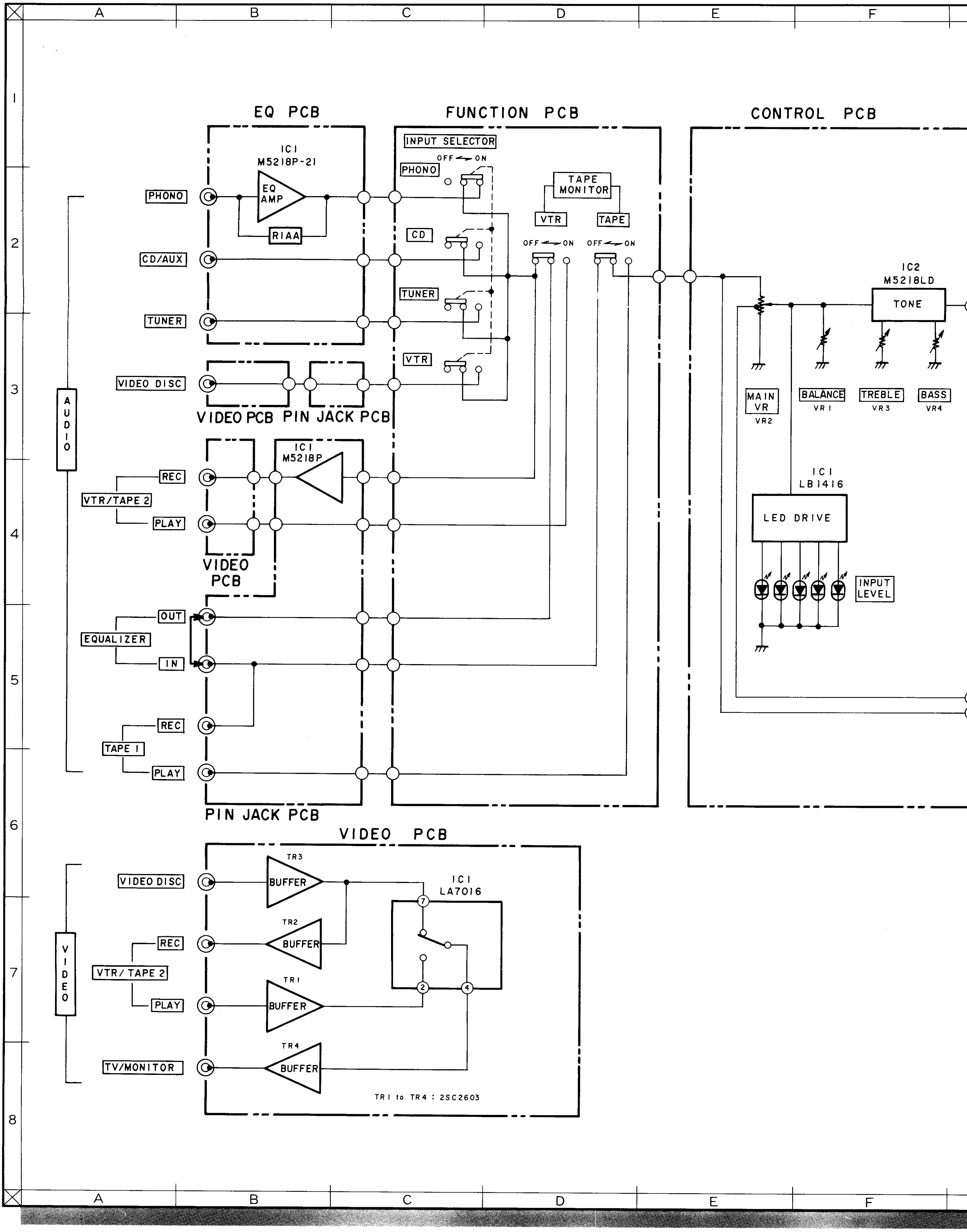


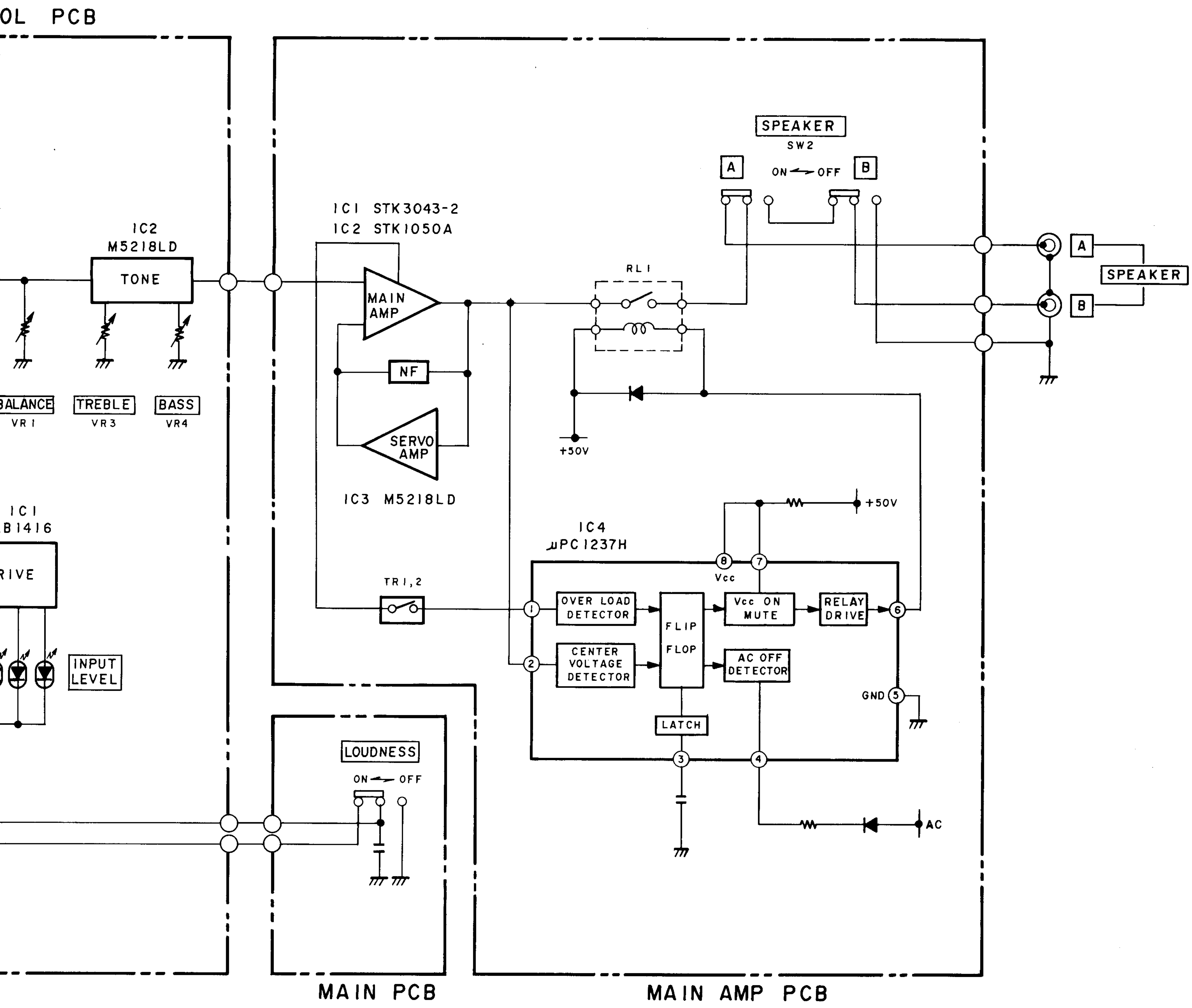
0
6
9
8
7
4
3
1
5
2

STK3042

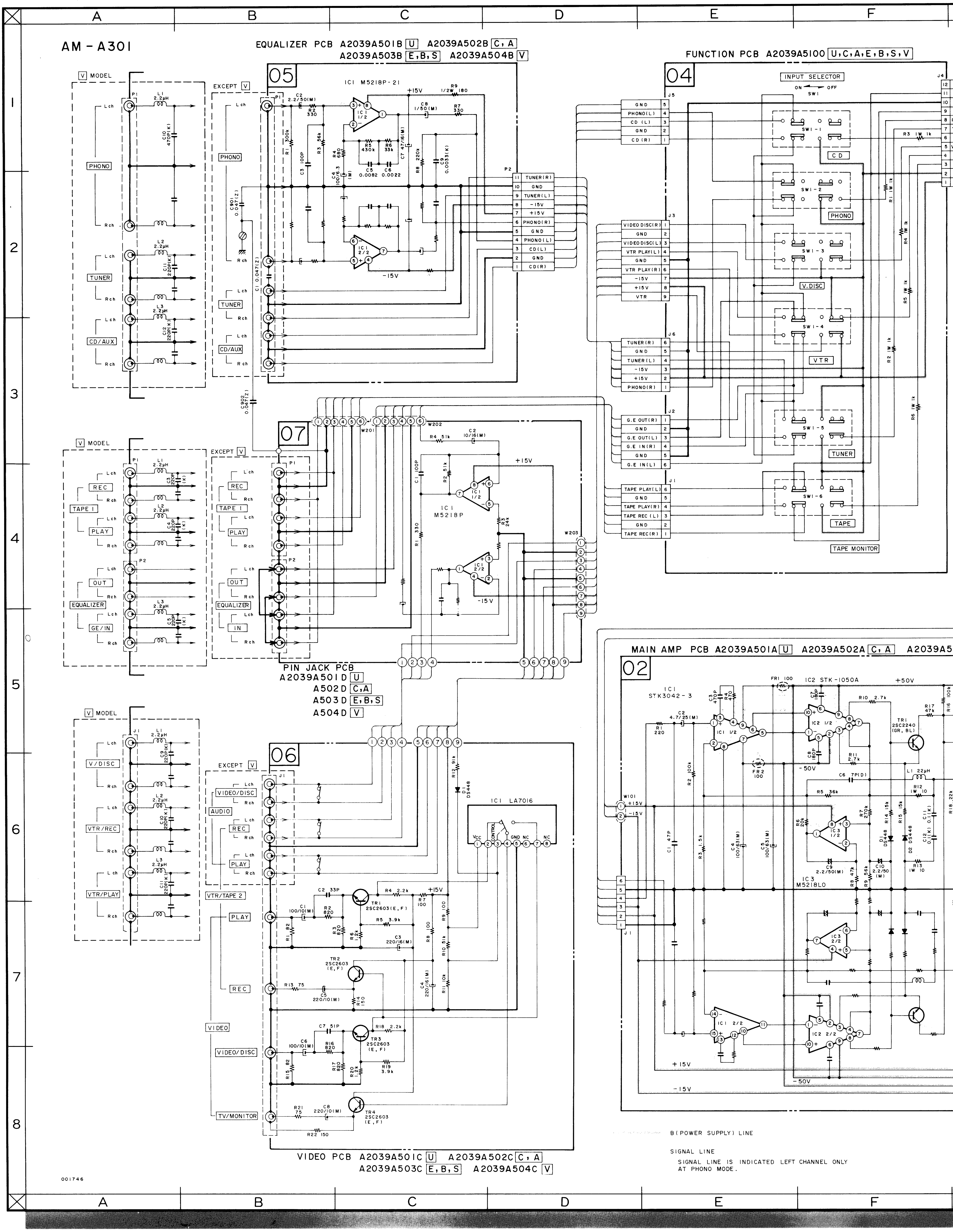


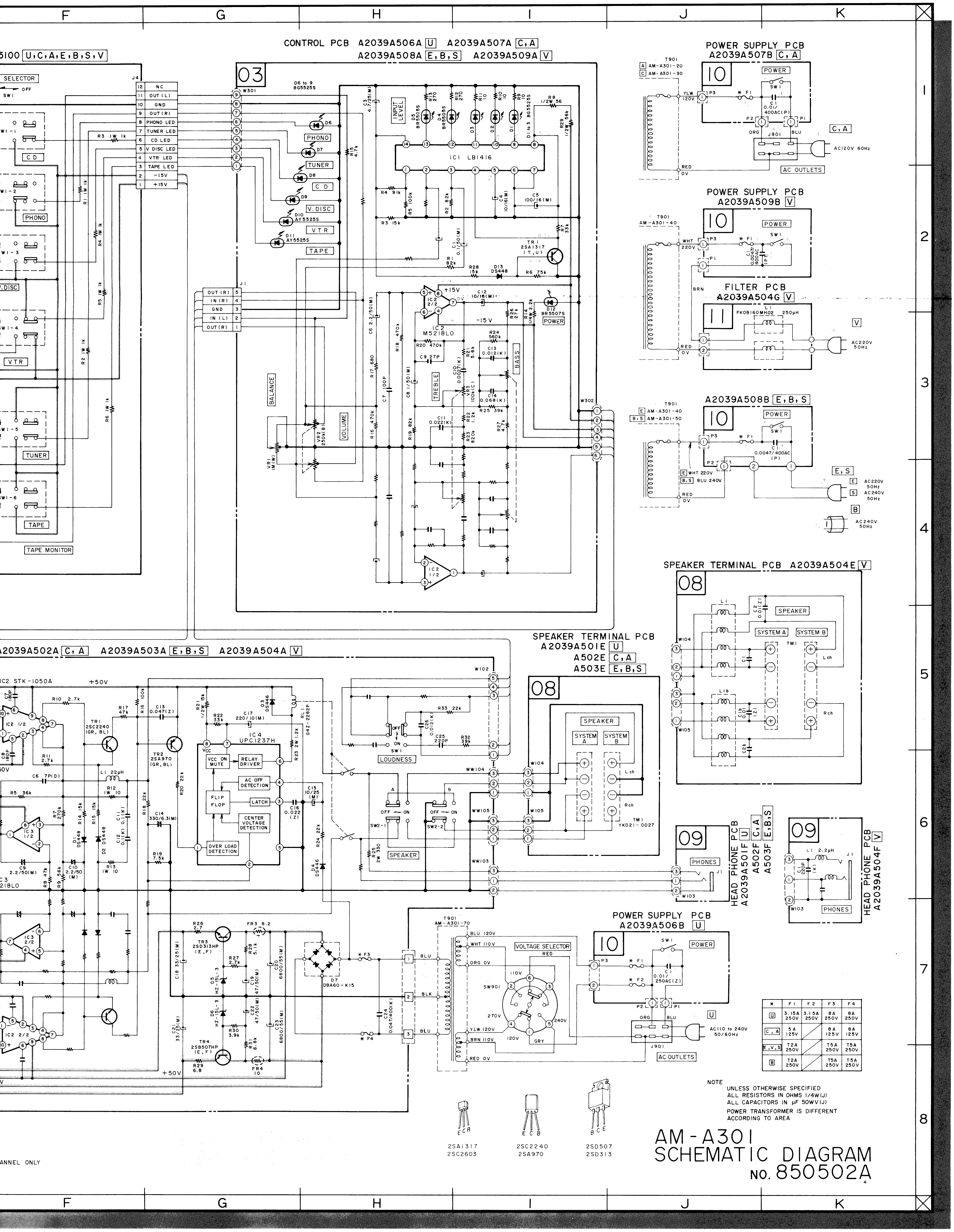
3
6
9
10
13
4
12
1
15
8
2
7
5
11
14


A
B
C
D
E
F
1
2
3
4
5
6
7
8
EQ PCB
FUNCTION PCB
CONTROL PCB
IC1
M5218P-21
EQ AMP
RIAA
INPUT SELECTOR
OFF ⟷ ON
PHONO
CD
TUNER
VTR
TAPE MONITOR
VTR
TAPE
OFF ⟷ ON
OFF ⟷ ON
PHONO
CD/AUX
TUNER
VIDEO DISC
AUDIO
VIDEO PCB
PIN JACK PCB
IC1
M5218P
REC
VTR/TAPE 2
PLAY
VIDEO PCB
OUT
EQUALIZER
IN
REC
TAPE 1
PLAY
PIN JACK PCB
IC2
M5218LD
TONE
MAIN VR
VR2
BALANCE
VR1
TREBLE
VR3
BASS
VR4
IC1
LB1416
LED DRIVE
INPUT LEVEL
VIDEO PCB
VIDEO DISC
TR3
BUFFER
REC
TR2
BUFFER
VTR/TAPE 2
PLAY
TR1
BUFFER
TV/MONITOR
TR4
BUFFER
VIDEO
IC1
LA7016
7
2
4
TR1 to TR4 : 2SC2603


OL PCB
IC2
M5218LD
TONE
BALANCE
VR1
TREBLE
VR3
BASS
VR4
IC1
B1416
RIVE
INPUT
LEVEL
IC1 STK3043-2
IC2 STK1050A
MAIN
AMP
NF
SERVO
AMP
IC3 M5218LD
RL1
+50V
SPEAKER
SW2
A
ON OFF
B
SPEAKER
A
B
IC4
μPC1237H
+50V
8
Vcc
7
TR1,2
1
OVER LOAD
DETECTOR
2
CENTER
VOLTAGE
DETECTOR
FLIP
FLOP
Vcc ON
MUTE
AC OFF
DETECTOR
RELAY
DRIVE
6
GND 5
LATCH
3
4
AC
LOUDNESS
ON OFF
MAIN PCB
MAIN AMP PCB

AM-A301
BLOCK DIAGRAM
NO. 850501A(A2)


AM-A301
EQUALIZER PCB A2039A501B U A2039A502B C, A
A2039A503B E, B, S A2039A504B V
05
IC1 M5218P-21
FUNCTION PCB A2039A5100 U, C, A, E, B, S, V
04
INPUT SELECTOR
ON OFF
SW1
SW1-1
CD
SW1-2
PHONO
SW1-3
V.DISC
SW1-4
VTR
SW1-5
TUNER
SW1-6
TAPE
TAPE MONITOR
V MODEL
EXCEPT V
PHONO
TUNER
CD/AUX
Lch
Rch
GND
PHONO(L)
CD (L)
CD (R)
TUNER(R)
TUNER(L)
-15V
+15V
PHONO(R)
CD(L)
CD(R)
VIDEO DISC(R)
VIDEO DISC(L)
VTR PLAY(L)
VTR PLAY(R)
VTR
G.E OUT(R)
G.E OUT(L)
G.E IN(R)
G.E IN(L)
TAPE PLAY(L)
TAPE PLAY(R)
TAPE REC (L)
TAPE REC(R)
07
IC1 M5218P
REC
TAPE 1
PLAY
OUT
EQUALIZER
GE/IN
IN
PIN JACK PCB
A2039A501D U
A502D C, A
A503D E, B, S
A504D V
06
IC1 LA7016
V/DISC
VTR/REC
VTR/PLAY
VIDEO/DISC
AUDIO
VTR/TAPE 2
VIDEO
TV/MONITOR
TR1 2SC2603(E, F)
TR2 2SC2603 (E, F)
TR3 2SC2603 (E, F)
TR4 2SC2603 (E, F)
VIDEO PCB A2039A501C U A2039A502C C, A
A2039A503C E, B, S A2039A504C V
MAIN AMP PCB A2039A501A U A2039A502A C, A A2039A5
02
IC1 STK3042-3
IC2 STK-1050A
+50V
-50V
TR1 2SC2240 (GR, BL)
IC3 M5218L0
+15V
-15V
B(POWER SUPPLY) LINE
SIGNAL LINE
SIGNAL LINE IS INDICATED LEFT CHANNEL ONLY AT PHONO MODE.
001746
A
B
C
D
E
F
1
2
3
4
5
6
7
8

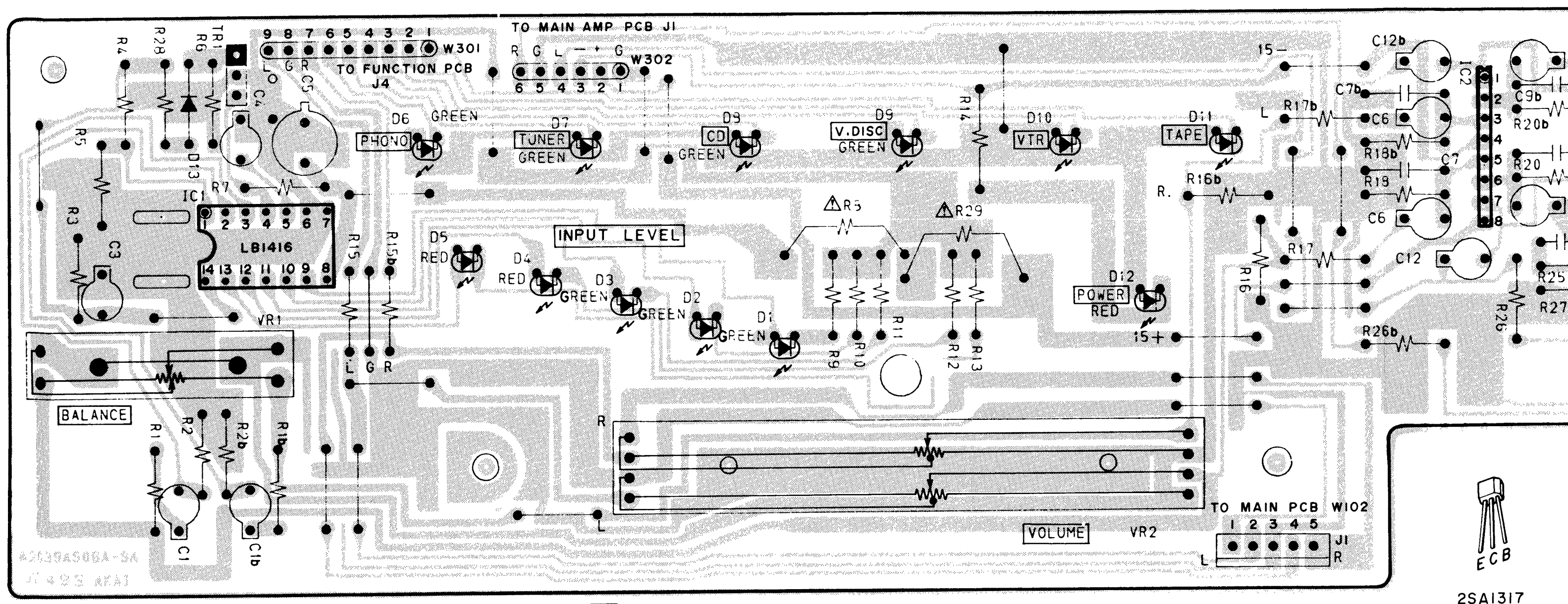

F
G
H
I
J
K
5100 U,C,A,E,B,S,V
SELECTOR
OFF
SW1
J4
12 NC
11 OUT (L)
10 GND
9 OUT (R)
8 PHONO LED
7 TUNER LED
6 CD LED
5 V DISC LED
4 VTR LED
3 TAPE LED
2 -15V
1 +15V
CD
PHONO
V.DISC
VTR
TUNER
TAPE
TAPE MONITOR
CONTROL PCB A2039A506A U A2039A507A C,A
A2039A508A E,B,S A2039A509A V
03
W301
D6 to 9 BG5525S
INPUT LEVEL
IC1 LB1416
TR1 2SA1317 (T,U)
D10 AY5525S
D11 AY5525S
D12 BR5507S
POWER
J1
OUT (R)
IN (R)
GND
IN (L)
OUT (R)
IC2 M5218L0
TREBLE
BASS
BALANCE
VOLUME
VR1 1M(W)
VR2 250k(B)
VR3 100k(C)
W302
POWER SUPPLY PCB A2039A507B C,A
T901
A AM-A301-20
C AM-A301-30
10
POWER
SW1
C1 0.01/400AC(P)
J901
AC OUTLETS
AC120V 60Hz
POWER SUPPLY PCB A2039A509B V
AM-A301-40
FILTER PCB A2039A504G V
11
FK08160MH02 250μH
AC220V 50Hz
A2039A508B E,B,S
E AM-A301-40
B,S AM-A301-50
C1 0.0047/400AC (P)
E WHT 220V
B,S BLU 240V
AC220V 50Hz
AC240V 50Hz
SPEAKER TERMINAL PCB A2039A504E V
08
SPEAKER
SYSTEM A
SYSTEM B
TM1
Lch
Rch
W104
W105
A2039A502A C,A A2039A503A E,B,S A2039A504A V
IC2 STK-1050A
+50V
TR1 2SC2240 (GR,BL)
TR2 2SA970 (GR,BL)
IC4 UPC1237H
VCC ON MUTE
RELAY DRIVER
AC OFF DETECTION
FLIP FLOP
LATCH
CENTER VOLTAGE DETECTION
OVER LOAD DETECTION
RL1 G4Z-2282P
W102
LOUDNESS
SW1
SW2-1
SW2-2
SPEAKER
SPEAKER TERMINAL PCB
A2039A501E U
A502E C,A
A503E E,B,S
08
SPEAKER
SYSTEM A
SYSTEM B
TM1 YKD21-0027
WW104
WW105
WW103
09
PHONES
J1
W103
HEAD PHONE PCB A2039A501F U A502F C,A A503F E,B,S
09
PHONES
HEAD PHONE PCB A2039A504F V
TR3 2SD313HP (E,F)
TR4 2SB507HP (E,F)
D7 DBA60-K15
T901 AM-A301-70
VOLTAGE SELECTOR
SW901
110V
120V
220V
240V
270V
POWER SUPPLY PCB A2039A506B U
10
POWER
AC110 to 240V 50/60Hz
AC OUTLETS
2SA1317
2SC2603
2SC2240
2SA970
2SD507
2SD313
E C B
B C E
ANNEL ONLY

*	F1	F2	F3	F4
U	3.15A 250V	3.15A 250V	8A 250V	8A 250V
C,A	5A 125V		8A 125V	8A 125V
E,V,S	T2A 250V		T5A 250V	T5A 250V
B	T2A 250V		T5A 250V	T5A 250V

NOTE

UNLESS OTHERWISE SPECIFIED
ALL RESISTORS IN OHMS 1/4W(J)
ALL CAPACITORS IN μF 50WV(J)
POWER TRANSFORMER IS DIFFERENT
ACCORDING TO AREA

AM-A301
SCHEMATIC DIAGRAM
NO. 850502A


TO MAIN AMP PCB J1
TO FUNCTION PCB J4
W301
W302
PHONO
TUNER
CD
V.DISC
VTR
TAPE
GREEN
RED
INPUT LEVEL
POWER
LB1416
IC1
IC2
TREBLE
BASS
VR1
VR2
VR3
VR4
BALANCE
VOLUME
TO MAIN PCB W102
1 2 3 4 5
J1
A2039A506A-5A

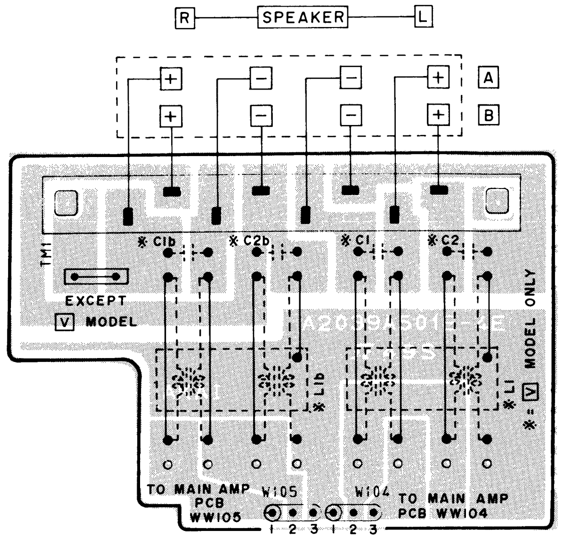
CONTROL PCB A2039A506A U
507A C.A
508A E.B.S
509A V

E C B

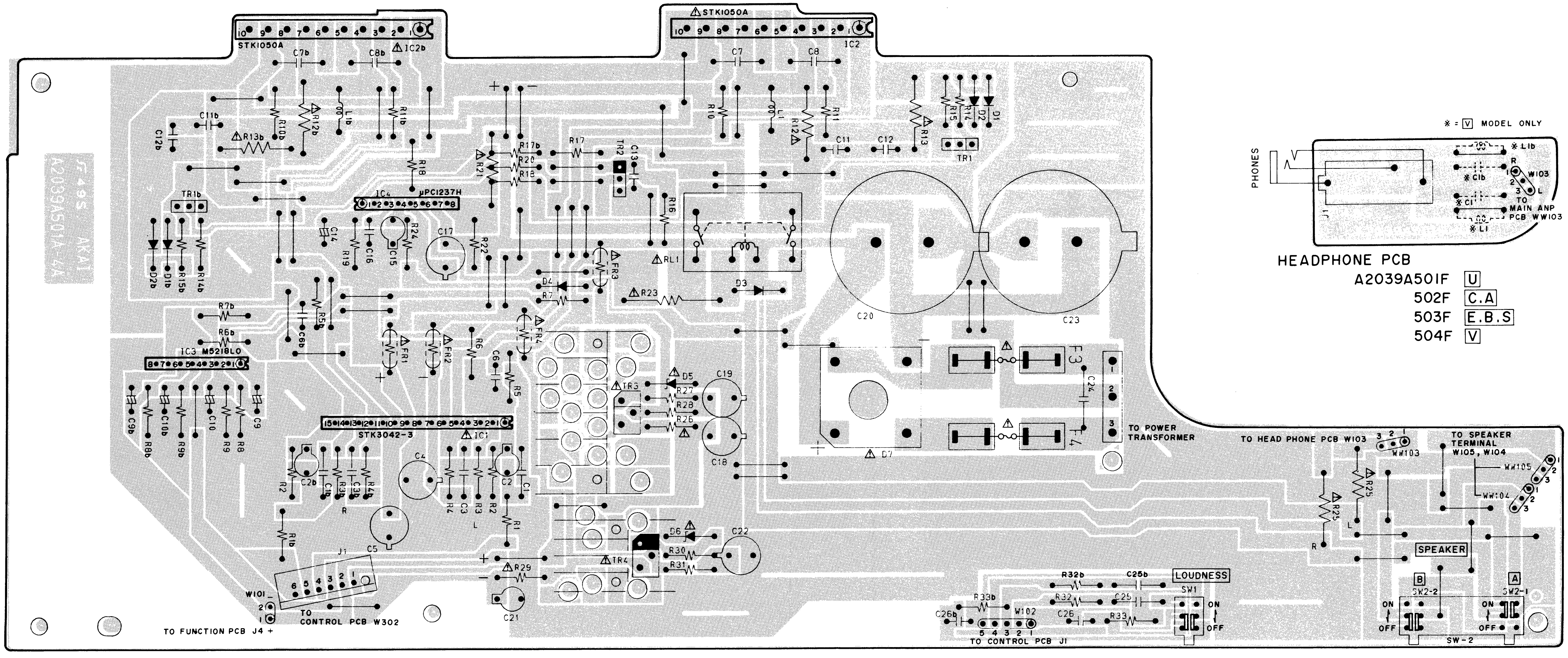
2SA1317

B ▣ • • = PNP TRANSISTOR

TR1 --- 2SA1317


R
SPEAKER
L
A
B
TM1
EXCEPT
V MODEL
※C1b
※C2b
※C1
※C2
※L1b
※L1
※ = V MODEL ONLY
TO MAIN AMP PCB WW105
W105
W104
TO MAIN AMP PCB WW104
1 2 3 1 2 3

SPEAKER TERMINAL PCB
A2039A501E U
502E C.A
503E E.B.S
504E V


STK1050A
IC2b
IC2
IC1
IC3 M5218L0
IC4 μPC1237H
STK3042-3
TR1b
TR1
TR2
TR3
TR4
RL1
C20
C23
F3
F4
TO POWER TRANSFORMER
TO HEAD PHONE PCB W103
WW103
TO SPEAKER TERMINAL W105, W104
WW105
WW104
SPEAKER
LOUDNESS
SW1
SW2-2
SW2-1
SW-2
ON
OFF
J1
W101
W102
TO FUNCTION PCB J4 +
TO CONTROL PCB W302
TO CONTROL PCB J1
A2039A501A-4A

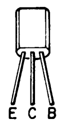
※ = V MODEL ONLY
PHONES
J1
※L1b
※C1b
※C1
※L1
W103
TO MAIN ANP PCB WW103

HEADPHONE PCB
A2039A501F U
502F C.A
503F E.B.S
504F V

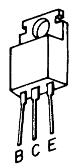
MAIN AMP PCB A2039A501A U
502A C.A
503A E.B.S
504A V

WARNING: ⚠ INDICATES SAFETY CRITICAL COMPONENTS FOR CONTINUED SAFETY. REPLACE SAFETY CRITICAL COMPONENTS ONLY WITH MANUFACTURER'S RECOMMENDED PARTS

AVERTISSEMENT: ⚠ IL INDIQUE LES COMPOSANTS CRITIQUES DE SÉCURITÉ. POUR MAINTENIR LE DEGRÉ DE SÉCURITÉ DE L'APPAREIL, NE REMPLACER QUE DES PIÈCES RECOMMANDEES PAR LE FABRICANT



2SC2240
2SA970

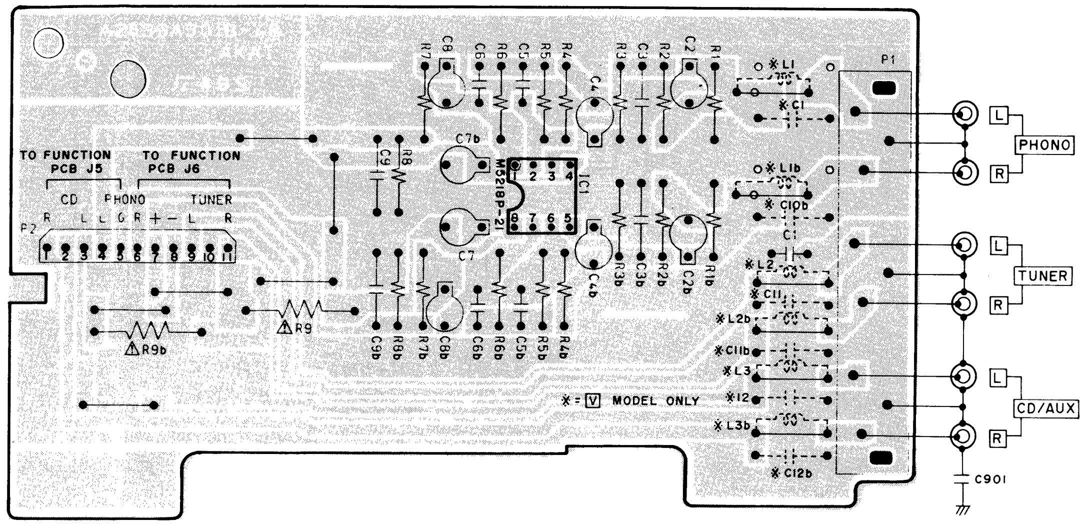


2SB507
2SD313

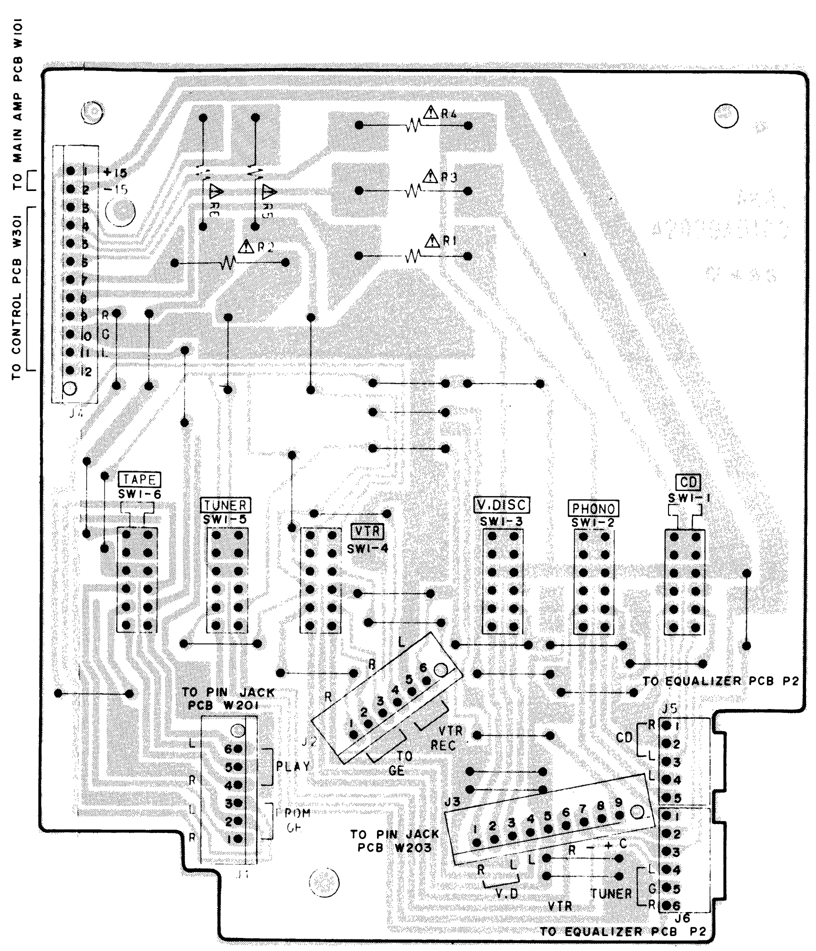
B ▣ • • = PNP TRANSISTOR

B • • • = NPN TRANSISTOR

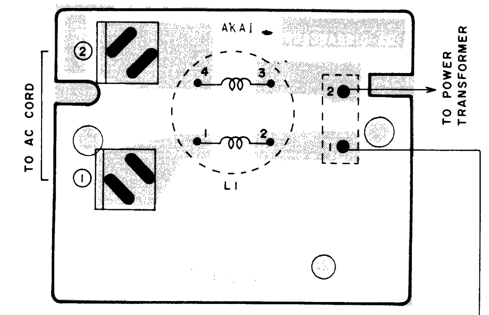
TR1, 1b --- 2SC2240 (GR, BL)
TR2, 2b --- 2SA970 (GR, BL)
TR3 ------ 2SD313HP (E, F)
TR4 ------ 2SB507HP (E, F)


TO FUNCTION PCB J5
TO FUNCTION PCB J6
CD
PHONO
TUNER
P1
P2
IC1
M5218P
PHONO
TUNER
CD/AUX
L
R
C901
※ = V MODEL ONLY

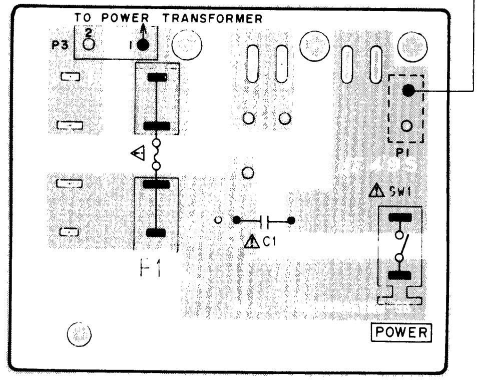
EQUALIZER PCB A2039A501B [U]
502B [C.A]
503B [E.B.S]
504B [V]


TO MAIN AMP PCB W101
TO CONTROL PCB W301
TAPE SW1-6
TUNER SW1-5
VTR SW1-4
V.DISC SW1-3
PHONO SW1-2
CD SW1-1
TO PIN JACK PCB W201
TO PIN JACK PCB W203
TO EQUALIZER PCB P2
J5
J6
J3
J4
J2
PLAY
VTR REC
TO GE
TUNER
V.D
VTR
CD

FUNCTION PCB A2039A5001

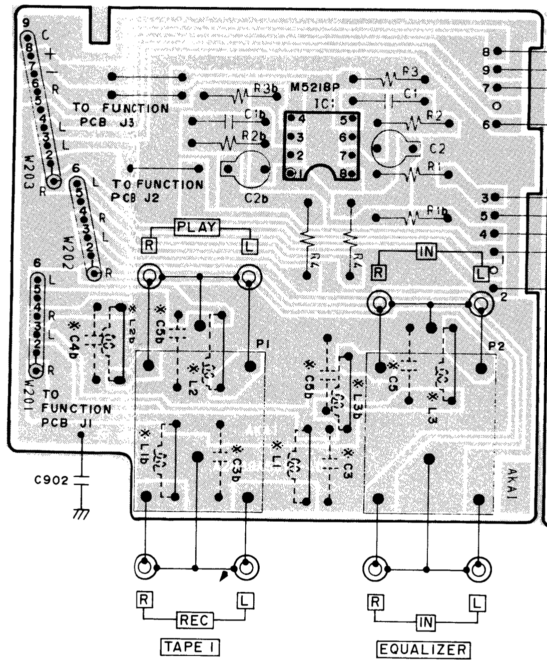

TO AC CORD
TO POWER TRANSFORMER
AKAI
L1

FILTER PCB A2039A504G [V]


TO POWER TRANSFORMER
P3
P1
SW1
C1
F1
POWER

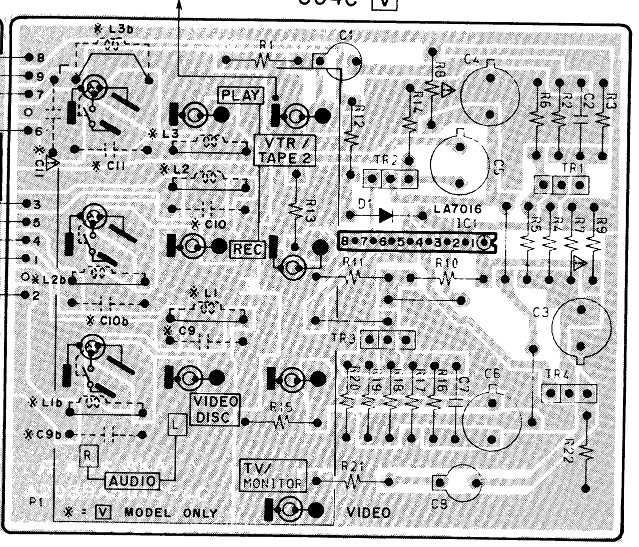
POWER SUPPLY PCB
A2039A509B [V]

PIN JACK PCB A2039A501D [U]
502D [C.A]
503D [E.B.S]
504D [V]


TO FUNCTION PCB J3
TO FUNCTION PCB J2
TO FUNCTION PCB J1
W203
W202
W201
M5218P
IC1
PLAY
IN
P1
P2
C902
R
L
REC
TAPE 1
IN
EQUALIZER

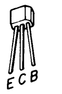
VIDEO PCB A2039A501C [U]
502C [C.A]
503C [E.B.S]
504C [V]

TO MAIN PCB J1 ⑤

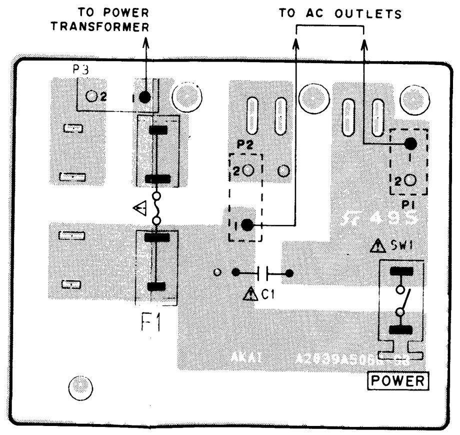

PLAY
VTR / TAPE 2
REC
VIDEO DISC
AUDIO
TV/ MONITOR
VIDEO
LA7016
IC1
P1
※ = V MODEL ONLY

= NPN TRANSISTOR

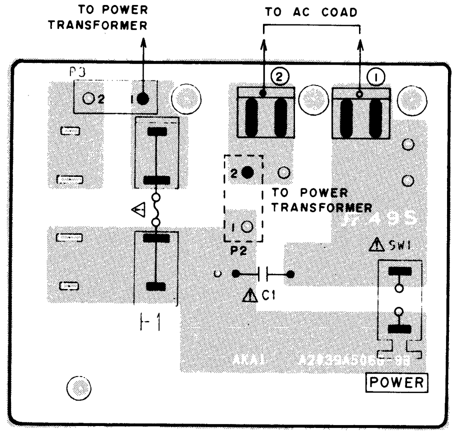
TRI to 3 ---- 2SC2603 (E, F)



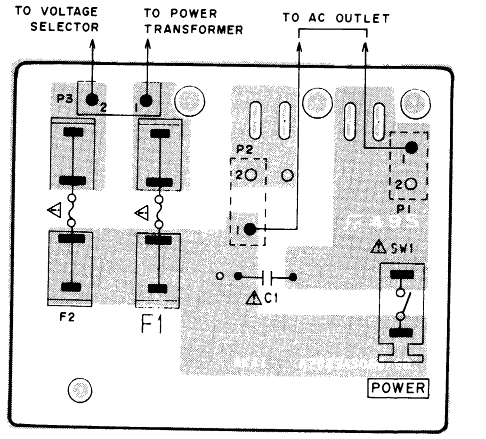
2SC2603


TO POWER TRANSFORMER
TO AC OUTLETS
P3
P2
P1
SW1
C1
F1
POWER

POWER SUPPLY PCB
A2039A507B [A.C]


TO POWER TRANSFORMER
TO AC COAD
TO POWER TRANSFORMER
P3
P2
SW1
C1
F1
POWER

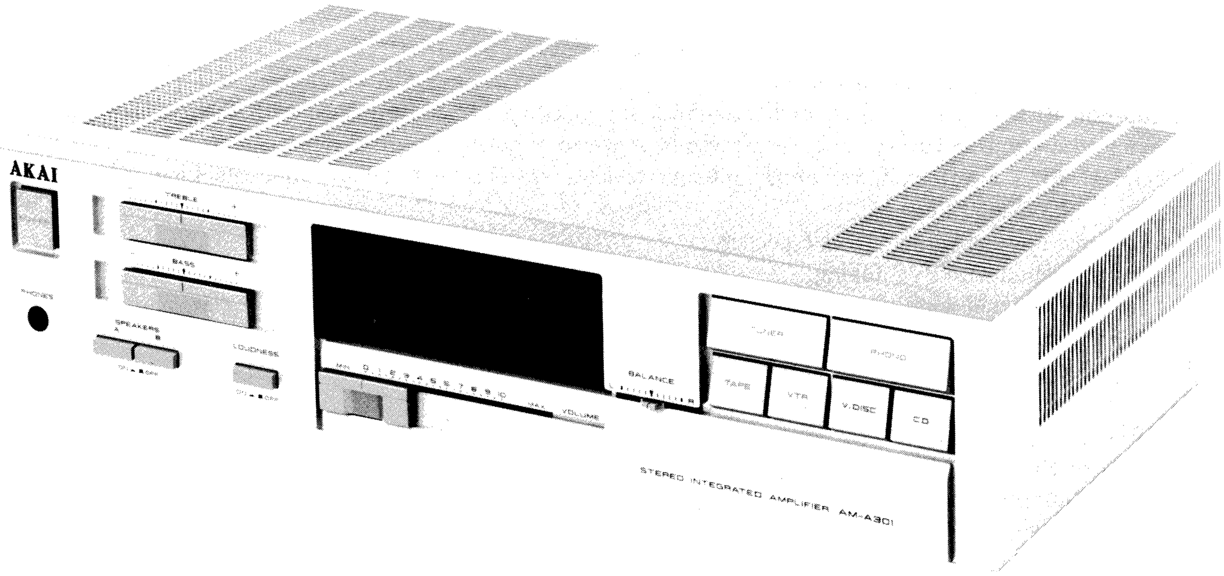
POWER SUPPLY PCB
A2039A508B [E.B.S]


TO VOLTAGE SELECTOR
TO POWER TRANSFORMER
TO AC OUTLET
P3
P2
P1
SW1
C1
F2
F1
POWER

POWER SUPPLY PCB
A2039A506B [U]

WARNING: ⚠ INDICATES SAFETY CRITICAL COMPONENTS FOR CONTINUED SAFETY. REPLACE SAFETY CRITICAL COMPONENTS ONLY WITH MANUFACTURER'S RECOMMENDED PARTS

AVERTISSEMENT: ⚠ IL INDIQUE LES COMPOSANTS CRITIQUES DE SÉCURITÉ. POUR MAINTENIR LE DEGRÉ DE SÉCURITÉ DE L'APPAREIL, NE REMPLACER QUE DES PIÈCES RECOMMANDEES PAR LE FABRICANT


AKAI
TREBLE
BASS
PHONES
SPEAKERS
A
B
LOUDNESS
MIN
MAX
VOLUME
BALANCE
TUNER
PHONO
TAPE
VTR
V.DISC
CD
STEREO INTEGRATED AMPLIFIER AM-A301

STEREO INTEGRATED AMPLIFIER

MODEL AM-A301

SECTION 1 SERVICE MANUAL 3
SECTION 2 PARTS LIST 9

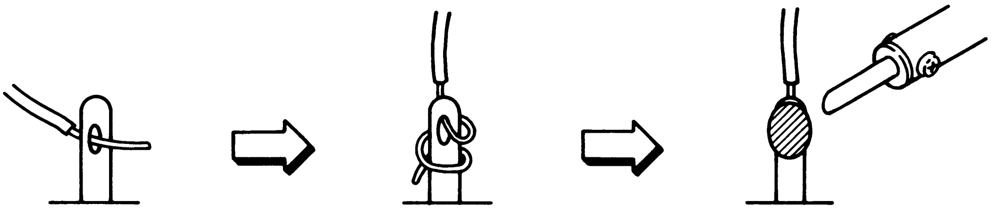
SAFETY INSTRUCTIONS

SAFETY CHECK AFTER SERVICING

Confirm the specified insulation resistance between power cord plug prongs and externally exposed parts of the set is greater than 10 Mohms, but for equipment with external antenna terminals (tuner, receiver, etc.) and is intended for $\boxed{C}$ or $\boxed{A}$, specified insulation resistance should be more than 2.2 Mohms (ground terminals, microphone jacks, headphone jacks. line-in-out jacks etc.)

PRECAUTIONS DURING SERVICING

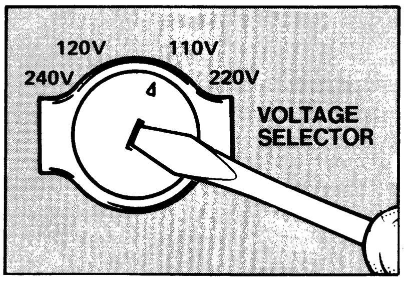
1. Parts identified by the ⚠ symbol parts are critical for safety.
   Replace only with parts number specified.
2. In addition to safety, other parts and assemblies are specified for conformance with such regulations as those applying to spurious radiation. These must also be replaced only with specified replacements.
   Examples: RF converters, tuner units, antenna selector switches, RF cables, noise blocking capacitors, noise blocking filters, etc.
3. Use specified internal wiring. Note especially:
   1) Wires covered with PVC tubing
   2) Double insulated wires
   3) High voltage leads
4. Use specified insulating materials for hazardous live parts. Note especially:
   1) Insulation Tape
   2) PVC tubing
   3) Spacers (Insulating Barriers)
   4) Insulation sheets for transistors
   5) Plastic screws for fixing microswitch (especially in turntable)
5. When replacing AC primary side components (transformers, power cords, noise blocking capacitors, etc.), wrap ends of wires securely about the terminals before soldering.



6. Observe that wires do not contact heat producing parts (heatsinks, oxide metal film resistors, fusible resistors, etc.).
7. Check that replaced wires do not contact sharp edged or pointed parts.
8. Also check areas surrounding repaired locations.
9. Use care that foreign objects (screws, solder droplets, etc.) do not remain inside the set.

VOLTAGE CONVERSION

Models for Canada, USA, Europe, UK and Australia are not equipped with this facility, Each machine is preset at the factory according to destination, but some machines can be set to 110V, 120V, 220V, or 240V as required.
If your machine's voltage can be converted:
Before connecting the power cord, turn the VOLTAGE SELECTOR located on the rear panel with a screwdriver until the correct voltage is indicated.



SECTION 1

SERVICE MANUAL

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II. DISMANTLING OF UNIT 5
III. CONTROLS 6
IV. PRINCIPAL PARTS LOCATION 7
V. ADJUSTMENT 7
VI. PC BOARD TITLE AND IDENTIFICATIONS 8

For basic adjustments, measuring methods, and operating principles, refer to GENERAL TECHNICAL MANUAL.

I. SPECIFICATIONS

POWER AMPLIFIER SECTION

POWER OUTPUT (by FTC) 20Hz to 20kHz	8 ohms 60W/0.05%
POWER BANDWIDTH (IHF –3dB, 8 ohms)	10Hz to 60kHz (0.3%)
S/N (IHF-A) PHONO	72dB
AUX	95dB
RESIDUAL NOISE (8 ohms)	0.5mV
CHANNEL SEPARATION (IHF, 1kHz)	55dB
DAMPING FACTOR (1kHz, 8 ohms)	30
REQUIRED SPEAKER IMPEDANCE	8 to 16 ohms

PRE AMPLIFIER SECTION

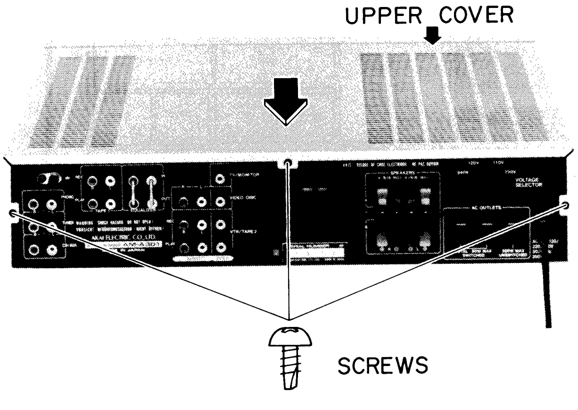
INPUT SENSITIVITY/IMPEDANCE	
PHONO	2mV/47kohms
AUX	150mV/47kohms
TUNER	150mV/47kohms
TAPE	150mV/47kohms
OUTPUT LEVEL/IMPEDANCE TAPE REC	150mV/1kohms
FREQUENCY RESPONSE	
PHONO (RIAA DEVIATION)	±0.5dB
TUNER, AUX, TAPE	5Hz to 100kHz (–3dB)
TONE CONTROL	
BASS	±8dB
TREBLE	±8dB
PHONO MAX. INPUT LEVEL	120mV
POWER REQUIREMENTS	120V, 60Hz for USA & Canada 220V, 50Hz for Europe except UK 240V, 50Hz for UK & Australia 110V/120V/220V/240V, 50Hz/60Hz convertible for other countries
DIMENSIONS	440(W) x 100(H) x 267(D) mm (17.3 x 3.9 x 10.5 inches)

* For improvement purposes, specifications and design are subject to change without notice.

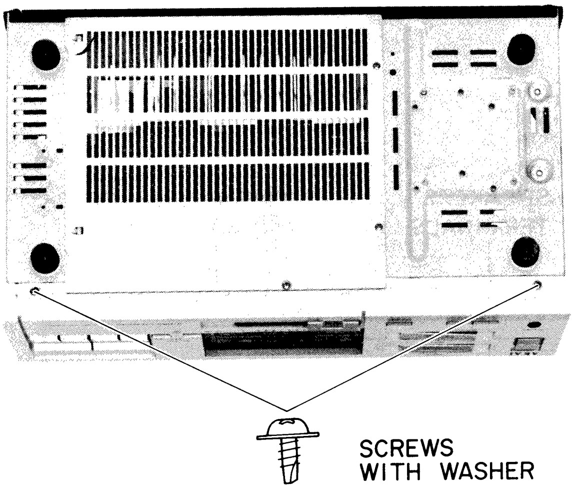
II. DISMANTLING OF UNIT

In case of trouble, etc. necessitating dismantling, please dismantle in the order shown in the photographs. Reassemble in reverse order.

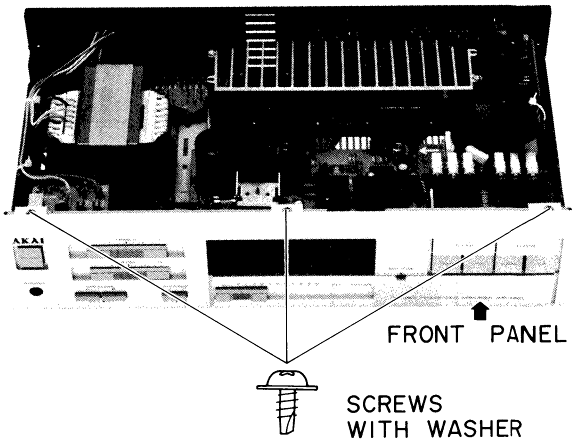
1


UPPER COVER
SCREWS

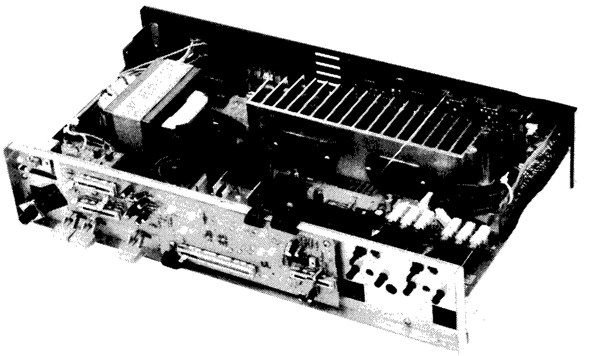
2


SCREWS
WITH WASHER

3


FRONT PANEL
SCREWS
WITH WASHER

4



III. CONTROLS

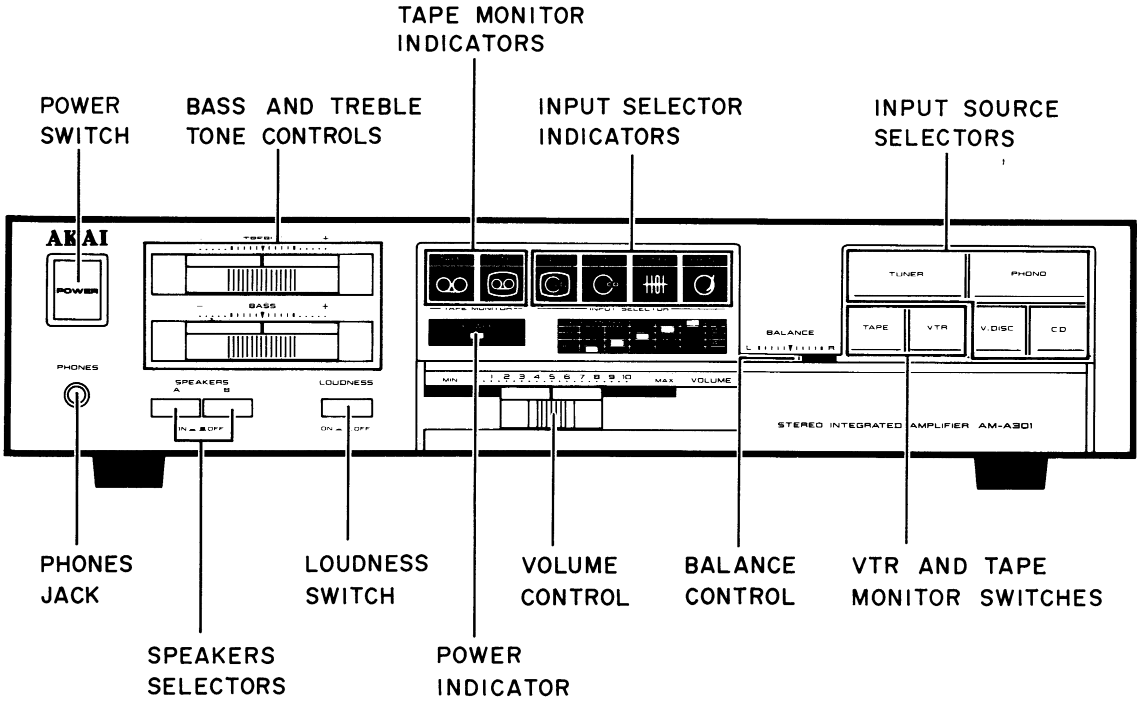

TAPE MONITOR INDICATORS
POWER SWITCH
BASS AND TREBLE TONE CONTROLS
INPUT SELECTOR INDICATORS
INPUT SOURCE SELECTORS
AKAI
POWER
PHONES
SPEAKERS A B
LOUDNESS
TUNER
PHONO
TAPE
VTR
V.DISC
CD
BALANCE
VOLUME
STEREO INTEGRATED AMPLIFIER AM-A301
PHONES JACK
LOUDNESS SWITCH
VOLUME CONTROL
BALANCE CONTROL
VTR AND TAPE MONITOR SWITCHES
SPEAKERS SELECTORS
POWER INDICATOR

Fig. 3-1 Front View

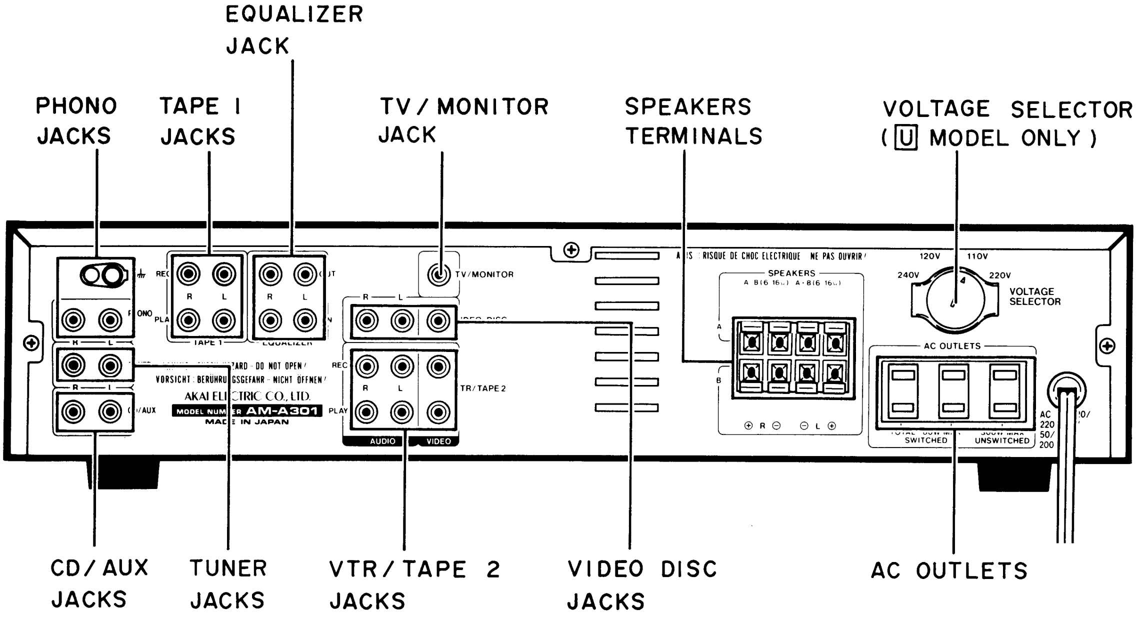

EQUALIZER JACK
PHONO JACKS
TAPE I JACKS
TV/MONITOR JACK
SPEAKERS TERMINALS
VOLTAGE SELECTOR (U MODEL ONLY)
TV/MONITOR
120V
110V
240V
220V
VOLTAGE SELECTOR
AC OUTLETS
SWITCHED
UNSWITCHED
AKAI ELECTRIC CO., LTD.
AM-A301
AUDIO
VIDEO
CD/AUX JACKS
TUNER JACKS
VTR/TAPE 2 JACKS
VIDEO DISC JACKS
AC OUTLETS

Fig. 3-2 Rear View

IV. PRINCIPAL PARTS LOCATION

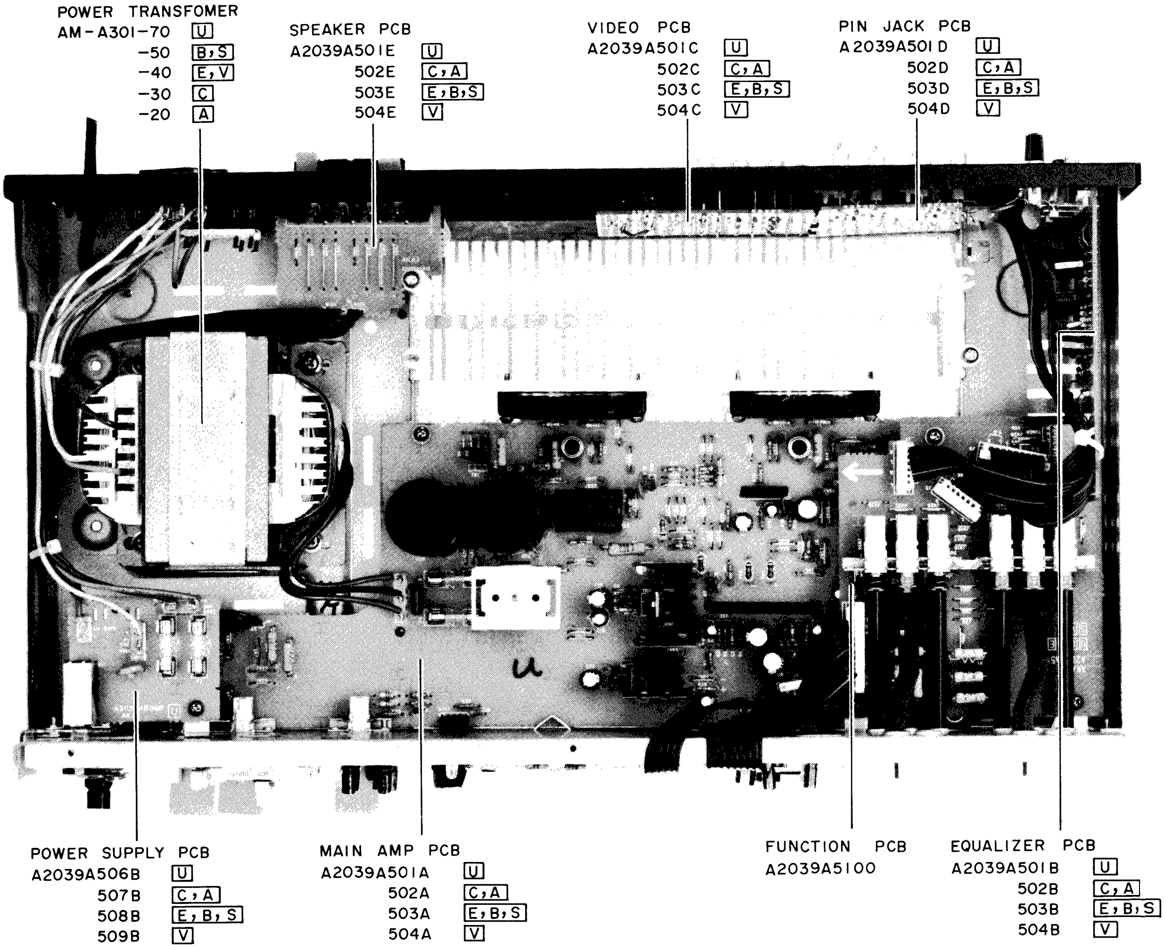

POWER TRANSFOMER
AM-A301-70 U
-50 B,S
-40 E,V
-30 C
-20 A
SPEAKER PCB
A2039A501E U
502E C,A
503E E,B,S
504E V
VIDEO PCB
A2039A501C U
502C C,A
503C E,B,S
504C V
PIN JACK PCB
A2039A501D U
502D C,A
503D E,B,S
504D V
POWER SUPPLY PCB
A2039A506B U
507B C,A
508B E,B,S
509B V
MAIN AMP PCB
A2039A501A U
502A C,A
503A E,B,S
504A V
FUNCTION PCB
A2039A5100
EQUALIZER PCB
A2039A501B U
502B C,A
503B E,B,S
504B V

Fig. 4-1 Top View

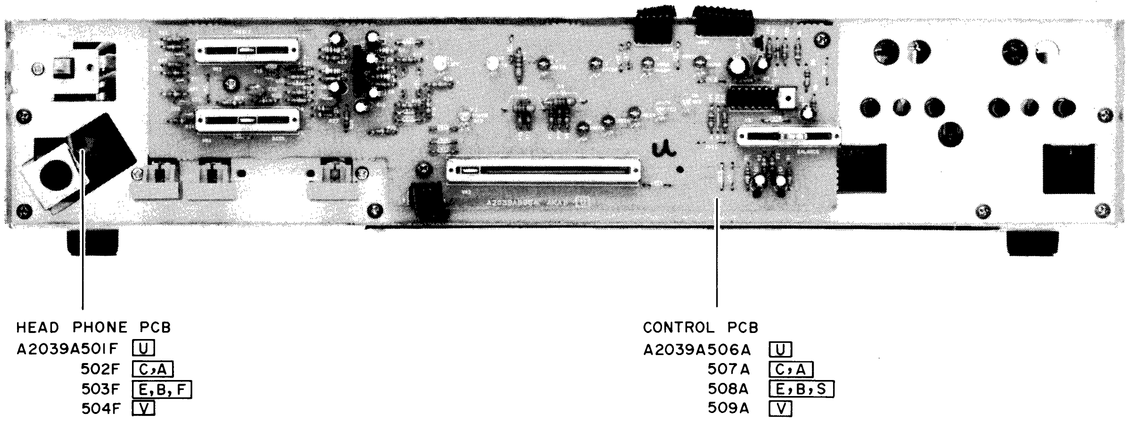

HEAD PHONE PCB
A2039A501F U
502F C,A
503F E,B,F
504F V
CONTROL PCB
A2039A506A U
507A C,A
508A E,B,S
509A V

Fig. 4-2 Front View

V. ADJUSTMENTS

No Adjustment is Necessary for this model.

VI. PC BOARD TITLE AND IDENTIFICATIONS

PC BOARD TITLE		PC BOARD NUMBER	REMARKS
MAIN AMP	PC BOARD	A2039A501A	U
		502A	C, A
		503A	E, B, S
		504A	V
EQUALIZER	PC BOARD	A2039A501B	U
		502B	C, A
		503B	E, B, S
		504B	V
VIDEO	PC BOARD	A2039A501C	U
		502C	C, A
		503C	E, B, S
		504C	V
PIN JACK	PC BOARD	A2039A501D	U
		502D	C, A
		503D	E, B, S
		504D	V
SPEAKER	PC BOARD	A2039A501E	U
		502E	C, A
		503E	E, B, S
		504E	V
HEADPHONE	PC BOARD	A2039A501F	U
		502F	C, A
		503F	E, B, S
		504F	V
FILTER	PC BOARD	A2039A504G	V
CONTROL	PC BOARD	A2039A506A	U
		507A	C, A
		508A	E, B, S
		509A	V
POWER SUPPLY	PC BOARD	A2039A506B	U
		507B	C, A
		508B	E, B, S
		509B	V
FUNCTION	PC BOARD	A2039A5100	

SECTION 2

PARTS LIST

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2. MAIN AMP PC BOARD 12
3. CONTROL PC BOARD 12
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5. EQUALIZER PC BOARD 12
6. VIDEO PC BOARD 12
7. PIN JACK PC BOARD 12
8. SPEAKER PC BOARD 12
9. HEAD PHONE PC BOARD 13
10. POWER SUPPLY PC BOARD 13
11. FILTER PC BOARD 13
12. ASSEMBLY BLOCK 14
13. FINAL ASSEMBLY BLOCK 15
INDEX 16

Resistor and Capacitor which is not listed in this parts list, please refer to COMMON LIST FOR SERVICE PARTS.

ATTENTION

1. **When placing an order for parts, be sure to list the parts no. model no., and description of each part. If any of this information is omitted, there are instances in which parts cannot be shipped or the wrong parts will be delivered.**
2. **Please be careful not to make a mistake in the parts no. If the parts no. is in error, a part different from the one ordered may be delivered.**
3. **Because part numbers and part definitions and supply in the Preliminary Parts List may have been the subject of changes, please use this parts list for all future reference.**

HOW TO USE THIS PARTS LIST

1. This Parts List shows those parts which are considered necessary for repairs. Other parts, such as resistors and capacitors, are shown in the "Common List for Service Parts" from which these parts should be selected and parts.
2. The Recommended Spare Parts List shows those parts in the Parts List which are considered particularly important for service.
3. Parts not shown in the Parts List and "Common List for Service Parts" will not in principle be supplied.
4. How to read the parts list
   a) Mechanism Block
   b) P.C Board Block

a) Mechanism Block

2. HEAD BASE BLOCK

REF. NO.	PART NO.	DESCRIPTION
2-1x	BH-T2023A320A	HEAD BASE BLOCK GX-F66R
2-2	HP-H2206A010A	HEAD R/P PR4-8FU C
2-3	ZS-477876	PAN20×03STL CMT
2-4	ZS-536488	BID20×08STL CMT
2-5	ZG-402895	CS ANGLE ADJUST SPRING

SP (Service Parts) Classification

A small "x" indicates the inability to show that particular part in the Photo or Illustration.

This number corresponds with the individual parts index number in that figure

This number corresponds with the Figure Number

b) P.C Board Block

6. SYS. CON. P C BOARD BLOCK

REF. NO.	PART NO.	DESCRIPTION
6-1	BA-T2034A070A	PC SYS CON BLK GX-F44R
6-IC1	EI-324536	IC HD14049BP
6-IC2	EI-336801	IC MB8841-564M
6-IC3	EI-331661	IC SN7405N
6-IC4	EI-336725	IC M54527P
6-TR1to4	ET-200985	TR 2SC2603 F,G
6-TR5to28	ET-554657	TR 2SA733A P,Q
6-D1	ED-318292	D SILICON H 1S2473T-77 T26
6-D2to4	ED-308952	D GERMA V 1K34A-LR F07
6-D5to10	ED-318292	D SILICON H 1S2473T-77 T26
6-X1	EI-318384	OSC X'TAL NC-18C 3.579545MHZ

SP (Service Parts) Classification

These reference symbols correspond with component symbols in the Schematic Diagrams.

5. The kind of part and its installation position can both be determined by the Part Number. To determine where a part number is listed, utilize the Parts Index at the end of the Parts List. It is necessary first of all to find the Part Number. This can be accomplished by using the Reference Number listed at the right of the part number in the Parts Index.

WARNING

⚠ INDICATES SAFETY CRITICAL COMPONENTS. FOR CONTINUED SAFETY, REPLACE SAFETY CRITICAL COMPONENTS ONLY WITH MANUFACTURE'S RECOMMENDED PARTS

AVERTISSEMENT

⚠ IL INDIQUE LES COMPOSANTS CRITIQUES DE SÉCURITÉ. POUR MAINTENIR LE DEGRÉ DE SÉCURITÉ DE L'APPAREIL, NE REMPLACER QUE DES PIÈCES RECOMMANDEES PAR LÉ FABRICANT

RECOMMENDED SPARE PARTS

Because, if the parts listed below are on hand, almost any repair can be accomplished, we suggest that you stock these Recommended Spare Parts Items.

REF. NO.	PART NO.	DESCRIPTION
1 N	BT-358548	⚠ TRANS POWER AM-A301-20(A) [A]
2 N	BT-358546	⚠ TRANS POWER AM-A301-30(C) [C]
3 N	BT-358549	⚠ TRANS POWER AM-A301-40 (E,V) [E,V]
4 N	BT-358550	⚠ TRANS POWER AM-A301-50(B,S) [B,S]
5 N	BT-358545	⚠ TRANS POWER AM-A301-70(U) [U]
6	ED-355605	D LED AY5525S AMBER
7	ED-356424	D LED BG5525S GREEN
8	ED-356421	D LED BR5505S RED
9	ED-200749	D SILICON DBA60-K15 400/6.0A
10	ED-348990	D SILICON H DS446
11	ED-301911	D SILICON H DS448
12	ED-328486	D ZENER H HZ15 3
13 N	EF-355398	⚠ FUSE BET T 2.00A 250V [B]
14 N	EF-355399	⚠ FUSE BET T 5.00A 250V [B]
15	EF-601301	⚠ FUSE SEMKO T 2.00A 250V [E,V,S]
16	EF-249851	⚠ FUSE SEMKO T 5.00A 250V [E,V,S]
17	EF-326639	⚠ FUSE TSC A 250V 3.15A [U]
18	EF-341260	⚠ FUSE TSC A 250V 8.00A [U]
19	EF-346139	⚠ FUSE TSC 125V 5.00A [C,A]
20	EF-345658	⚠ FUSE TSC 125V 8.00A [C,A]
21	EI-352041	⚠ IC STK1050A
22 N	EI-358533	⚠ IC STK3042-3
23	EI-353852	IC LA7016
24 N	EI-358562	IC LB1416
25	EI-337228	IC M5218L0
26	EI-349719	IC M5218P
27	EI-344764	IC M5218P-21
28	EI-354080	IC UPC1237H
29	EQ-337159	⚠ RELAY POW G4Z-2282P 2N0 24V
30	ER-331188	⚠ R FUSE ERD2FC S10 1/4W 8R2J
31	ER-328278	⚠ R FUSE ERD2FC 1/4W 10R0G
32	ER-200746	⚠ R FUSE ERD2FC 1/4W 1000G
33	ES -337902	⚠ SW PUSH SDLD1P002 01-1
34	ES-349070	⚠ SW SELECTOR YKDS11-0002 02-4 [U]
35 N	ES-358556	SW PUSH ESB-621519 2THROW
36 N	ES-358555	SW PUSH ESB-62672 2-02-02S
37	ES-358564	SW PUSH ESB-62969 6 THROW
38	ET-347026	⚠ TR 2SB507HP E,F
39	ET-344176	⚠ TR 2SD313HP F
40 N	ET-355216	TR 2SA1317 T,U
41	ET-305463	TR 2SA970 GR,BL
42	ET-307195	TR 2SC2240 GR,BL
43	ET-308141	TR 2SC2603 G
44 N	EV-358539	VR SLIDE 25P1SVOF W105
45 N	EV-358541	VR SLIDE 25P2SV C104
46 N	EV-358563	VR SLIDE 60P2SVOM B254

"NOTE" N: New Parts

SYMBOL FOR DESTINATION

[A] : AAL (USA)
[B] : UK (England)
[C] : CSA (Canada)
[E] : CEE (Europe)
[S] : SAA (Australia)
[U] : U/T (Universal Area)
[V] : VDE (West Germany)

1. PC BOARD BLOCK

REF. NO.	PART NO.	DESCRIPTION
1-1A	BA-A2039A020A	PC MAIN BLK AM-A301(U)
1-1B	BA-A2039A020B	PC MAIN BLK AM-A301(C,A)
1-1C	BA-A2039A020C	PC MAIN BLK AM-A301(E,B,S)
1-1D	BA-A2039A020D	PC MAIN BLK AM-A301(V)
1-2A	BA-A2039A030A	PC CONTROL BLK AM-A301(U)
1-2B	BA-A2039A030B	PC CONTROL BLK AM-A301(C,A)
1-2C	BA-A2039A030C	PC CONTROL BLK AM-A301(E,B,S)
1-2D	BA-A2039A030D	PC CONTROL BLK AM-A301(V)

"NOTES"

(1) PC MAIN BLK consists of following PC BOARDS.
- MAIN AMP PC BOARD
- EQUALIZER PC BOARD
- VIDEO PC BOARD
- PIN JACK PC BOARD
- SPEAKER PC BOARD
- HEAD PHONE PC BOARD
- FILTER PC BOARD

(2) PC CONTROL BLK consists of following PC BOARDS.
- CONTROL PC BOARD
- POWER SUPPLY PC BOARD

2, MAIN AMP PC BOARD

REF. NO.	PART NO.	DESCRIPTION
	MAIN AMP PC BOARD	
2-IC1	EI-358533	⚠ IC STK3042-3
2-IC3	EI-337228	IC M5218L0
2-IC4	EI-354080	IC UPC1237H
2-TR1	ET-307195	TR 2SC2240 GR,BL
2-TR2	ET-305463	TR 2SA970 GR,BL
2-TR3	ET-344176	⚠ TR 2SD313HP F
2-TR4	ET-347026	⚠ TR 2SB507HP E,F
2-D1,D2	ED-301911	D SILICON H DS448
2-D3,D4	ED-348990	D SILICON H DS446
2-D5,D6	ED-328486	⚠ D ZENER H HZ15 3
2-D7	ED-200749	⚠ D SILICON DBA60-K15 400/6.0A
2-SW1	ES-358555	SW PUSH ESB-62672 2-02-02S
2-SW2	ES-358556	SW PUSH ESB-621519 2- THROW
2-RL1	EQ-337159	⚠ RELAY POW G4Z-2282P 2N0 24V
2-L1	EO-337880	COIL FIX 2 202AK-018 2R2K
2-FR1	ER-200746	⚠ R FUSE ERD2FC 1/4W 1000G
2-FR2	ER-200746	⚠ R FUSE ERD2FC 1/4W 1000G
2-FR3	ER-331188	⚠ R FUSE ERD2FC S10 1/4W 8R2J
2-FR4	ER-328278	⚠ R FUSE ERD2FC 1/4W 10R0G
2-R12,R13	ER-337754	⚠ R OMF H S15 FS 1W 100J
2-R21	ER-333618	⚠ R CB H S15 FS RDS 1/2W 153J
2-R23	ER-338084	⚠ R OMF H SNP FS 2W 122J
2-R25	ER-355148	⚠ R OMF H S15 FS 2W 331J
2-R26	ER-328069	⚠ R CB H S10 FS RDS 1/4W 2R7J
2-R29	ER-333352	⚠ R CB H S10 FS RDS 1/4W 6R8J
2-C9,C10	EC-325320	C EC V F05 NP AWA 2R2M 50DC
2-C14	EC-311689	C EC V CUT NP 04D 331M 6.3DC
2-C20	EC-358559	C EC V CUT SM 682M 55.0DC
2-C23	EC-358559	C EC V CUT SM 682M 55.0DC
2-C24	EC-326583	C MMY V CUT CF921 473K 400DC
	ASSEMBLY BLOCK	
2-IC2	EI-352041	⚠ IC STK1050A
2-F3A	EF-341260	⚠ FUSE TSC A 250V 8.00A [U]
2-F3B	EF-345658	⚠ FUSE TSC 125V 8.00A [C,A]
2-F3C	EF-249851	⚠ FUSE SEMKO T 5.00A 250V [E,V,S]
2-F3D	EF-355399	⚠ FUSE BET T 5.00A 250V [B]
2-F4A	EF-341260	⚠ FUSE TSC A 250V 8.00A [U]
2-F4B	EF-345658	⚠ FUSE TSC 125V 8.00A [C,A]
2-F4C	EF-249851	⚠ FUSE SEMKO T 5.00A 250V [E,V,S]
2-F4D	EF-355399	⚠ FUSE BET T 5.00A 250V [B]

3. CONTROL PC BOARD

REF. NO.	PART NO.	DESCRIPTION
3-IC1	EI-358562	IC LB1416
3-IC2	EI-337228	IC M5218L0
3-TR1	ET-355216	TR 2SA1317 T,U
3-D1 to D3	ED-356424	D LED BG5525S GREEN
3-D4,D5	ED-356421	D LED BR5505S RED
3-D6 to D9	ED-356424	D LED BG5525S GREEN
3-D10,D11	ED-355605	D LED AY5525S AMBER
3-D12	ED-356421	D LED BR5505S RED
3-D13	ED-301911	D SILICON H DS448
3-VR1	EV-358539	VR SLIDE 25P1SV0F W105
3-VR2	EV-358563	VR SLIDE 60P2SV0M B254
3-VR3,VR4	EV-358541	VR SLIDE 25P2SV C104
3-R8	ER-333680	⚠ R CB H S15 FS RDS 1/2W 560J
3-R14	ER-663502	R CB H RD 1/2W 222J
3-R29	ER-333680	⚠ R CB H S15 FS RDS 1/2W 560J

4. FUNCTION PC BOARD

REF. NO.	PART NO.	DESCRIPTION
4-SW1	ES-358564	SW PUSH ESB-62969 6 THROW
4-R1 to R6	ER-321153	⚠ R OMF H S15 FS 1W 102J

5. EQUALIZER PC BOARD

REF. NO.	PART NO.	DESCRIPTION
5-IC1	EI-344764	IC M5218P-21
5-L1	EO-338420	COIL FIX 2 FL12R202E 202K [V]
5-L2,L3	EO-336934	COIL FIX 1 LAL03KH 2R2M [V]
5-R9	ER-666865	⚠ R CB H FS RDS 1/2W 181J
5-P1	EJ-336904	PIN J AJC-036-ACB P 6P

6. VIDEO PC BOARD

REF. NO.	PART NO.	DESCRIPTION
6-IC1	EI-353852	IC LA7016
6-TR1 to TR4	ET-308141	TR 2SC2603 G
6-D1	ED-301911	D SILICON H DS448
6-L1 to L3	EO-336934	COIL FIX 1 LAL03KH 2R2M [V]
6-R7,R8	ER-322591	⚠ R CB H S10 FS RDS 1/4W 101J
6-J1	EJ-358561	PIN J LAP0020-0015R 10P

7. PIN JACK PC BOARD

REF. NO.	PART NO.	DESCRIPTION
7-IC1	EI-349719	IC M5218P
7-L1 to L3	EO-336934	COIL FIX 1 LAL03KH 2R2M [V]
7-P1,P2	EJ-343365	PIN J YMC21-0063 P 4P

8. SPEAKER PC BOARD

REF. NO.	PART NO.	DESCRIPTION
8-L1	EO-342936	COIL BALUN [V]
8-TM1	EJ-351485	TERMINAL PUSH YKD21-0148A S 8P

9. HEAD PHONE PC BOARD

REF. NO.	PART NO.	DESCRIPTION
9-L1	EO-336934	COIL FIX 1 LAL03KH 2R2M [V]
9-J1	EJ-358535	PHONE J 3P M1669-ACCB 6.3

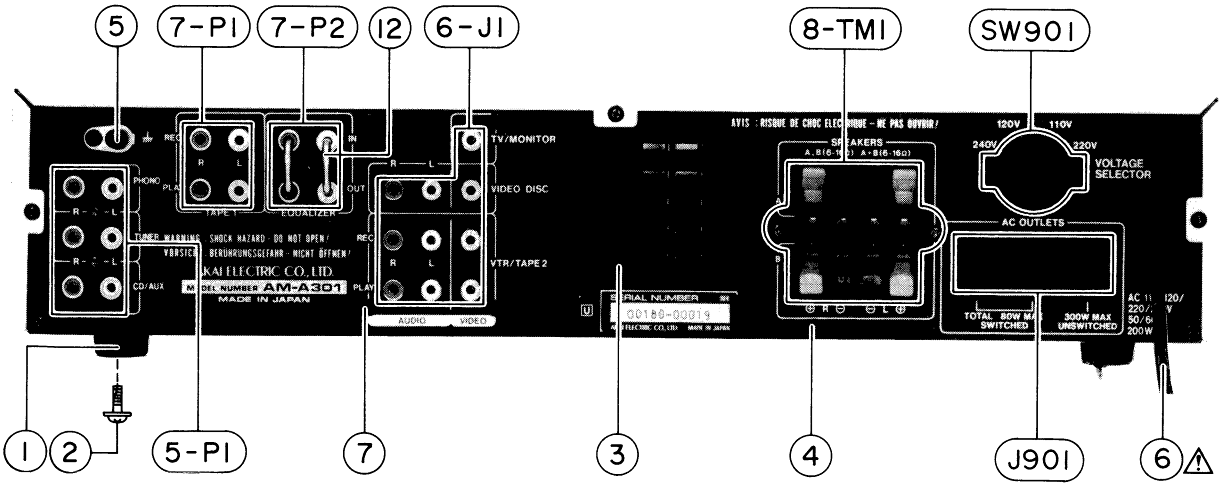
10. POWER SUPPLY PC BOARD

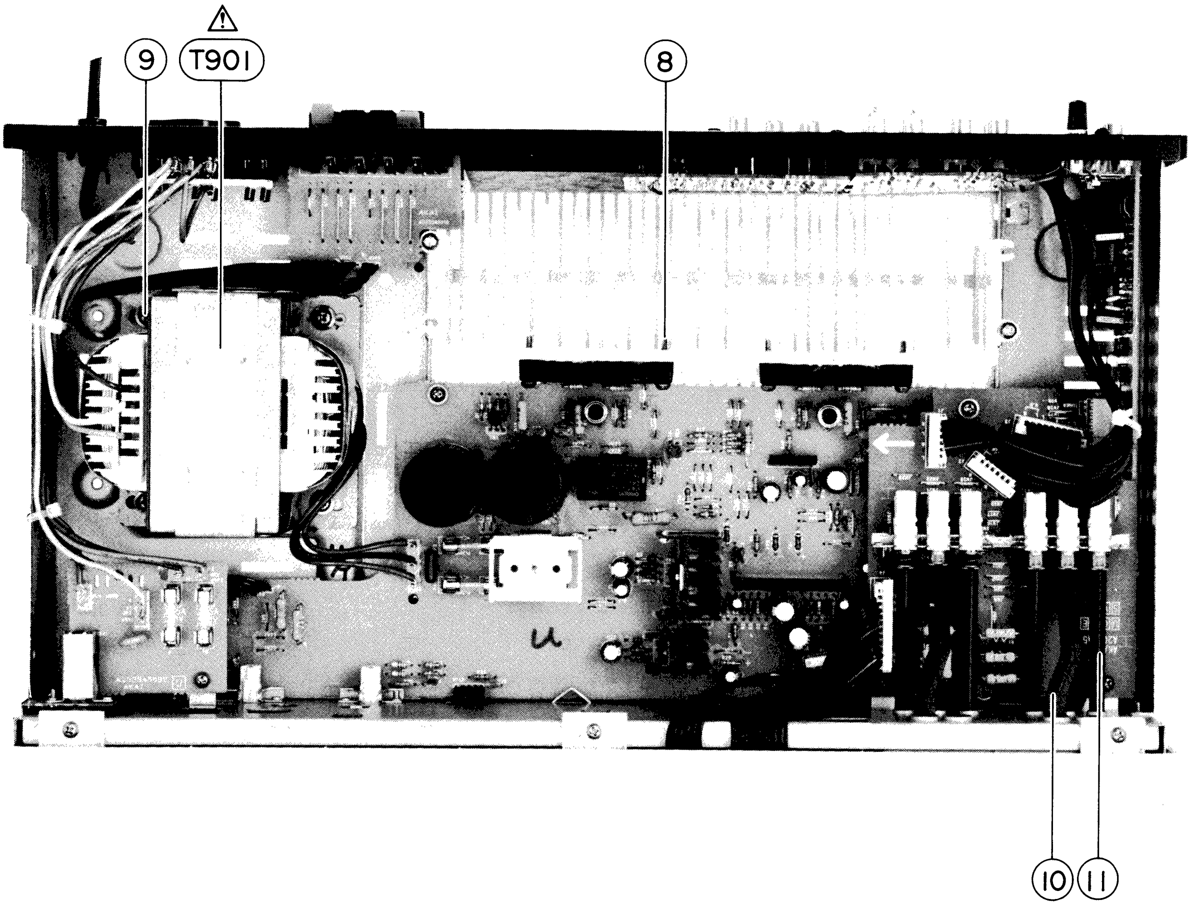
REF. NO.	PART NO.	DESCRIPTION
	POWER SUPPLY PC BOARD	
10-SW1	ES-337902	⚠ SW PUSH SDLD1P002 01-1
10-C1A	EC-320548	⚠ C CE V F 103Z 250AC [U]
10-C1B	EC-338411	⚠ C CE V FZ 103P 400AC [C,A]
10-C1C	EC-338496	⚠ C CE V FZ 472P 400AC [E,V,B,S]
	ASSEMBLY BLOCK	
10-F1A	EF-326639	⚠ FUSE TSC A 250V 3.15A [U]
10-F1B	EF-346139	⚠ FUSE TSC 125V 5.00A [C,A]
10-F1C	EF-601301	⚠ FUSE SEMKO T 2.00A 250V [E,V,S]
10-F1D	EF-355398	⚠ FUSE BET T 2.00A 250V [B]
10-F2	EF-326639	⚠ FUSE TSC A 250V 3.15A [U]

11. FILTER PC BOARD

REF. NO.	PART NO.	DESCRIPTION
11-L1	EO-338409	COIL LF FKOB160MH02 250UH [V]

ASSEMBLY BLOCK

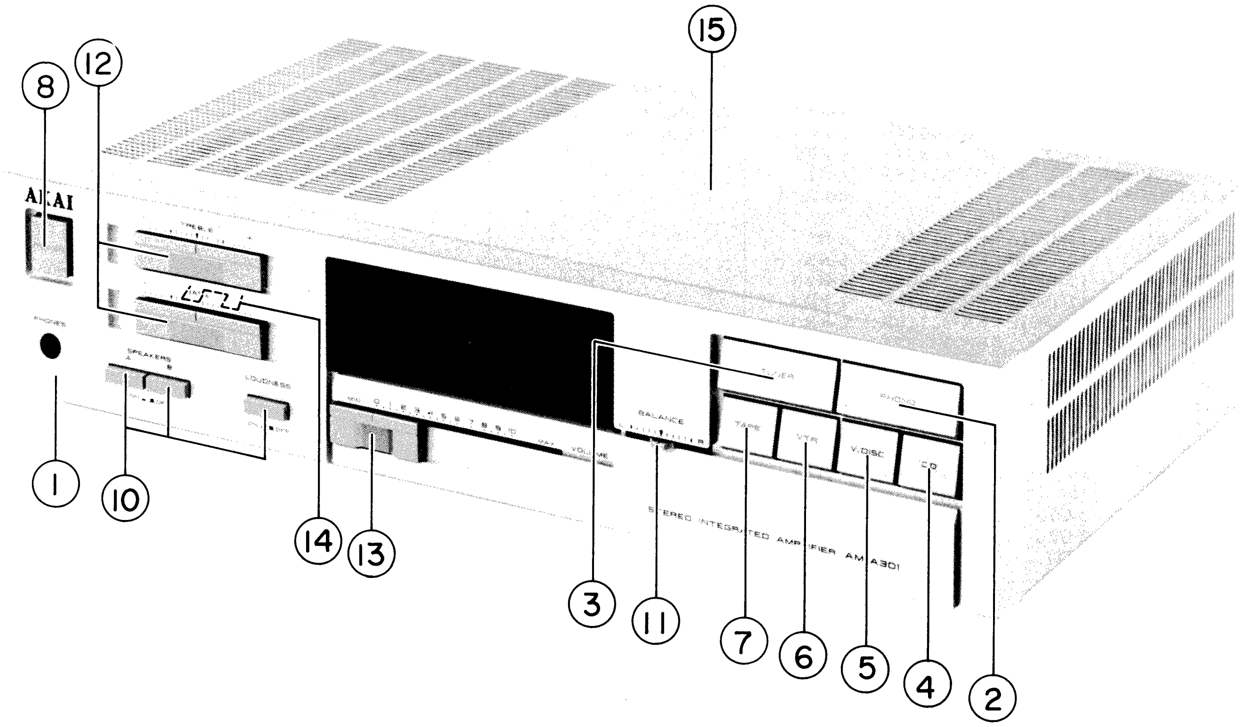

5
7-P1
7-P2
12
6-J1
8-TM1
SW901
TV/MONITOR
VIDEO DISC
VTR/TAPE 2
PHONO
TUNER
CD/AUX
TAPE 1
EQUALIZER
SPEAKERS
VOLTAGE SELECTOR
AC OUTLETS
MODEL NUMBER AM-A301
MADE IN JAPAN
SERIAL NUMBER
1
2
5-P1
7
3
4
J901
6⚠


⚠
9
T901
8
10
11

12. ASSEMBLY BLOCK

REF. NO.	PART NO.	DESCRIPTION
	ASSEMBLY BLOCK	
12-1	SA-332850	ROUND FOOT
12-2	ZS-331567	T2BR30×08STL CMT C080
12-3A	SP-358485A	PANEL REAR AM-A301(U)
12-3B	SP-358485B	PANEL REAR AM-A301(C,A)
12-3C	SP-358485C	PANEL REAR AM-A301(E)
12-3D	SP-358485M	PANEL REAR AM-A301(V)
12-3E	SP-358485D	PANEL REAR AM-A301(B,S)
12-4	ZS-308846	T2BR30×08STL BZN PROJECTION
12-5	EJ-329610	TERMINAL W/SCREW UB-0067 L 1P
12-6A	EW-354515	AC CORD 2 CORES KP-700A, VFF-CB U/T [U]
12-6B	EW-358513	⚠ AC CORD 2 CORES KD-8W, SPT-2-CB UC [C]
12-6C	EW-358515	⚠ AC CORD 2 CORES KP-8W, SPT-1-CB UC [A]
12-6D	EW-354625	⚠ AC CORD 2 CORES KP-419C, LTCE-2F E [E]
12-6E	EW-354513	⚠ AC CORD 2 CORES KP-419C, LTCE-2F EV [V]
12-6F	EW-354512	⚠ AC CORD 2 CORES LTBS-2F-CB B [B]
12-6G	EW-354514	⚠ AC CORD 2 CORES KP-560, LTSA2F-CB S [S]

FINAL ASSEMBLY BLOCK



REF. NO.	PART NO.	DESCRIPTION
12-7	ZW-698308	RV NYL30×055 BL
12-8	ZS-321279	T2BR30×18STL CMT
12-9	ZS-346742	ST BID40×08STL CMT CUP
12-10	TA-358475	JOINT (A)
12-11	TA-358473A	JOINT (B)-1
12-12	EJ-348218	PLUG SHORT PIN P2138
12-T901A	BT-358545	⚠ TRANS POWER AM-A301-70(U) [U]
12-T901B	BT-358546	⚠ TRANS POWER AM-A301-30(C) [C]
12-T901C	BT-358548	⚠ TRANS POWER AM-A301-20(A) [A]
12-T901D	BT-358549	⚠ TRANS POWER AM-A301-40(E,V) [E,V]
12-T901E	BT-358550	⚠ TRANS POWER AM-A301-50(B,S) [B,S]
12-J901A	EJ-337405	⚠ SOCKET OUTLET S2T733T164 JUC JUC 3x2P [U]
12-J901B	EJ-352642	⚠ SOCKET OUTLET S2T733T114T [C,A]
12-SW901	ES-349070	⚠ SW SELECTOR YKS11-0002 02-4 [U]
	EQUALIZER PC BOARD	
5-P1	EJ-336904	PIN J AJC-036-ACB P 6P
	VIDEO PC BOARD	
6-J1	EJ-358561	PIN J LAP0020-0015R 10P
	PIN JACK PC BOARD	
7-P1	EJ-343365	PIN J YMC21-0063 P 4P
7-P2	EJ-343365	PIN J YMC21-0063 P 4P
	SPEAKER PC BOARD	
8-TM1	EJ-351485	TERMINAL PUSH YKD21-0148A S 8P

13. FINAL ASSEMBLY BLOCK

REF. NO.	PART NO.	DESCRIPTION
	PANEL FRONT BLOCK	
13-1	BD-A2039A050A	PANEL FRONT BLK AM-A301
13-1B	BD-A2039A050B	PANEL FRONT BLK AM-A301-B
13-2	SK-358482E	KNOB (A) PHONO
13-2B	SK-358482A	KNOB (A)-B PHONO
13-3	SK-358482F	KNOB (A) TUNER
13-3B	SK-358482B	KNOB (A)-B TUNER
13-4	SK-358483E	KNOB (B) CD/AUX
13-4B	SK-358483A	KNOB (B)-B CD/ASX
13-5	SK-358483F	KNOB (B) V.DISC
13-5B	SK-358483B	KNOB (B)-B V.DISC
13-6	SK-358483G	KNOB (B) VTR/TAPE2
13-6B	SK-358483C	KNOB (B)-B VTR/TAPE2
13-7	SK-358483H	KNOB (B) TAPE1
13-7B	SK-358483D	KNOB (B)-B TAPE1
13-8	SK-343017C	KNOB POWER (2)
13-8B	SK-343017F	KNOB POWER-B
	FINAL ASSEMBLY BLOCK	
13-9x	ZS-498273	T2BR30×08STL CMT PWO80 [PANEL FRONT FIX]
13-10	SK-358479B	KNOB (F-2)
13-10B	SK-358479A	KNOB (F-1)
13-11	SK-358477B	KNOB (C-2)
13-11B	SK-358477A	KNOB (C-1)
13-12	SK-358480B	KNOB (E-2)
13-12B	SK-358480A	KNOB (E-1)
13-13	SK-358474B	KNOB (D-2)
13-13B	SK-358474A	KNOB (D-1)
13-14	ZG-360943	SP TONE
13-15	SP-349925A	COVER UPPER
13-15B	SP-349925C	COVER UPPER-B

NOTE:
PANEL FRONT BLK consists of 13-2 to 13-8B .

SYMBOL FOR COLOR VARIATION
NON: STANDARD COLOR
B or BL BLACK

INDEX

PART NO.	REF. NO.
BA-A2039A020A	1-1A
BA-A2039A020B	1-1B
BA-A2039A020C	1-1C
BA-A2039A020D	1-1D
BA-A2039A030A	1-2A
BA-A2039A030B	1-2B
BA-A2039A030C	1-2C
BA-A2039A030D	1-2D
BD-A2039A050A	13-1
BD-A2039A050B	13-1B
BT-358545	12-T901A
BT-358546	12-T901B
BT-358548	12-T901C
BT-358549	12-T901D
BT-358550	12-T901E
EC-311689	2-C14
EC-320548	10-C1A
EC-325320	2-C9
EC-325320	2-C10
EC-326583	2-C24
EC-338411	10-C1B
EC-338496	10-C1C
EC-358559	2-C20
EC-358559	2-C23
ED-200749	2-D7
ED-301911	2-D1
ED-301911	2-D2
ED-301911	3-D13
ED-301911	6-D1
ED-328486	2-D5
ED-328486	2-D6
ED-348990	2-D3
ED-348990	2-D4
ED-355605	3-D10
ED-355605	3-D11
ED-356421	3-D4
ED-356421	3-D5
ED-356421	3-D12
ED-356424	3-D1 to D3
ED-356424	3-D6 to D9
EF-249851	2-F3C
EF-249851	2-F4C
EF-326639	10-F1A
EF-326639	10-F2
EF-341260	2-F3A
EF-341260	2-F4A
EF-345658	2-F3B
EF-345658	2-F4B
EF-346139	10-F1B
EF-355398	10-F1D
EF-355399	2-F3D
EF-355399	2-F4D
EF-601301	10-F1C
EI-337228	2-IC3
EI-337228	3-IC2
EI-344764	5-IC1
EI-349719	7-IC1
EI-352041	2-IC2
EI-353852	6-IC1
EI-354080	2-IC4
EI-358533	2-IC1
EI-358562	3-IC1
EJ-329610	12-5
EJ-336904	5-P1
EJ-337405	12-J901A
EJ-343365	7-P1
EJ-343365	7-P2
EJ-348218	12-12
EJ-351485	8-TM1
EJ-352642	12-J901B
EJ-358535	9-J1
EJ-358561	6-J1
EO-336934	5-L2
EO-336934	5-L3
EO-336934	6-L1 to L3
EO-336934	7-L1 to L3
EO-336934	9-L1
EO-337880	2-L1
EO-338409	11-L1
EO-338420	5-L1
EO-342936	8-L1
EQ-337159	2-RL1
ER-200746	2-FR1
ER-200746	2-FR2
ER-321153	4-R1 to R6
ER-322591	6-R7
ER-322591	6-R8
ER-328069	2-R26
ER-328278	2-FR4
ER-331188	2-FR3
ER-333352	2-R29
ER-333618	2-R21
ER-333680	3-R8
ER-333680	3-R29
ER-337754	2-R12
ER-337754	2-R13
ER-338084	2-R23
ER-355148	2-R25
ER-663502	3-R14
ER-666865	5-R9
ES-337902	10-SW1
ES-349070	12-SW901
ES-358555	2-SW1
ES-358556	2-SW2
ES-358564	4-SW1
ET-305463	2-TR2
ET-307195	2-TR1
ET-308141	6-TR1 to TR4
ET-344176	2-TR3
ET-347026	2-TR4
ET-355216	3-TR1
EV-358539	3-VR1
EV-358541	3-VR3
EV-358541	3-VR4
EV-358563	3-VR2
EW-354512	12-6F
EW-354513	12-6E
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EW-358515	12-6C
SA-332850	12-1
SK-343017C	13-8
SK-343017F	13-8B
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TA-358475	12-10
ZG-360943	13-14
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ZS-321279	12-8
ZS-331567	12-2
ZS-346742	12-9
ZS-498273	13-9x
ZW-698308	12-7